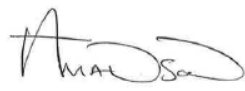



# Barnsley Town Centre, Transport Assessment



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# 1 Introduction



Capabilities on project:  
Transportation

# 1 Introduction

## 1.1 Introduction

AECOM have produced this Transport Assessment on behalf of Barnsley Metropolitan Borough Council in support of a redevelopment of the market area within Barnsley Town Centre. The proposals are briefly the demolition of the existing market area and multi storey car park and the construction of new retail units and a new market area along with a cinema and a library.

Within this report, the impact of the development traffic on the local highway network is assessed, with detailed modelling of key junctions being undertaken. The availability of sustainable access options including public transport, cycle routes and parking will also be reviewed within this report.

A site location plan, as taken from IBI drawing BBTC-IBI-XX-A-F100-PL-00-0001 is shown in **Figure 1** below.

**Figure 1 – Site Location Plan (Ref IBI drawing BBTC-IBI-XX-A-F100-PL-00-0001)**



This Transport Assessment has been undertaken with liaison with Barnsley Metropolitan Borough Council.

The Transport Assessment also takes due cognisance of local and national planning policy. Importantly the National Planning Policy Framework sets out the Government's aims for achieving sustainable development. As part of the Framework the Government sets out a presumption in favour of sustainable development.

Importantly, National Planning Policy Framework states that:

*"Development should only be prevented or refused on transport grounds where the residual impact of development are severe."*

This report seeks to demonstrate the sustainability of the site and its viability in terms of transport, and given its central location it is considered that the site is highly accessible by non-car modes of travel.

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## 1.2 Report Structure

Following this introductory chapter, this Transport Assessment includes the following:

- Section 2 provides details of the proposed development;
- Section 3 outlines relevant national and local policy documents;
- Section 4 summarises existing conditions at the proposed development site;
- Section 5 details the accessibility of the development site, identifying sustainable transport modes;
- Section 6 presents the trip generation and distribution patterns of the proposed site;
- Section 7 summarises the highways operation; and
- Section 8 provides a summary and conclusion.

The following appendices are located at the rear of this Transport Assessment:

- **Appendix A - Drawings and Figures;**
- **Appendix B - Accident Data;**
- **Appendix C - Traffic Flow Diagrams and Traffic Count Data;**
- **Appendix D - TRICS Outputs; and**
- **Appendix E - ARCADY / PICADY / LINSIG modelling results.**

## 2 Proposals



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Transportation

## 2 Proposals

### 2.1 Proposed Floorspace

The proposed development can be set out as follows:

- 30 500m<sup>2</sup> Retail / Food & Drink (Use Classes A1, A3 & A4);
- 4 500m<sup>2</sup> Cinema (Use Class D2);
- 3 000m<sup>2</sup> Library (Use Class D1), and
- 12 000m<sup>2</sup> for the refurbished existing market development;

The total proposed floorspace is therefore 50,000sq.m with the existing market and retail provision having an approximate overall floor area of 18,000sq.m.

In addition as part of the proposals it is proposed to promote the close of the existing Kendray Street level crossing using a Traffic Regulation Order (TRO), with all access to the car parking within the new centre via Lambra Road and Wesley Street, although access into CEAG will still be from Kendray Street on the eastern side of the railway.

### 2.2 Car Parking

The development will comprise the following levels of car parking:

- 174 spaces on the former CEAG site to the east of the Kendry Street level crossing and linked to the site via new footbridge over the railway;
- 194 car parking spaces retained within the existing basement of the Metropolitan Centre, with an additional 52 parking spaces, and
- 56 car parking spaces to the south of the site, with access from Lambra Road.

Therefore, there is proposed to be a total of 476 car parking spaces on the site following its redevelopment.

The car parking accumulation based upon the existing flows into and out of the site for both a Friday and a Saturday can then be given as follows.

**Table 1 – Friday Car Parking Accumulation**

Time	Kendray IN	Lambra IN	Total IN	Lambra OUT	ACC
					10
0700	10	31	41	7	44
0800	33	72	105	21	128
0900	33	163	196	67	257
1000	17	158	175	149	283
1100	15	128	143	144	282
1200	15	105	120	150	252
1300	13	83	96	145	203
1400	11	67	78	126	155
1500	4	39	43	91	107
1600	36	15	51	99	59

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1700	9	3	12	36	35
1800	4	0	4	5	34

The maximum parking accumulation on a Friday is therefore 283 spaces at 1000.

**Table 2 – Saturday Car parking Accumulation**

Time	Kendray IN	Lambra IN	Total IN	Lambra OUT	ACC
					10
0700	21	63	84	5	89
0800	28	201	229	28	290
0900	27	223	250	113	427
1000	13	232	245	178	494
1100	18	262	280	230	544
1200	23	220	243	243	544
1300	16	220	236	238	542
1400	22	161	183	238	487
1500	8	110	118	250	355
1600	16	41	57	235	177
1700	5	5	10	105	82
1800	3	0	3	9	76

The maximum accumulation can therefore be given as being 544 spaces between 1100 and 1300.

It should however be noted that the site is located in a highly sustainable location within the town centre adjacent to the public transport interchange and it is also proposed to provide VMS signage as part of the development to advise drivers of car parking availability within the town centre as a whole.

### 2.3 Access

The site currently takes access via an in only access across the Kendry Street level crossing and an access allowing all movements from Lambra Street, and as part of the proposals whilst the access from Lambra Street will remain the level crossing is to be closed and as such access will be via the new CEAG car park on Kendry Street.

With access into the CEAG car park being taken from Kendry Street via an amendment to the existing traffic signalised junction.

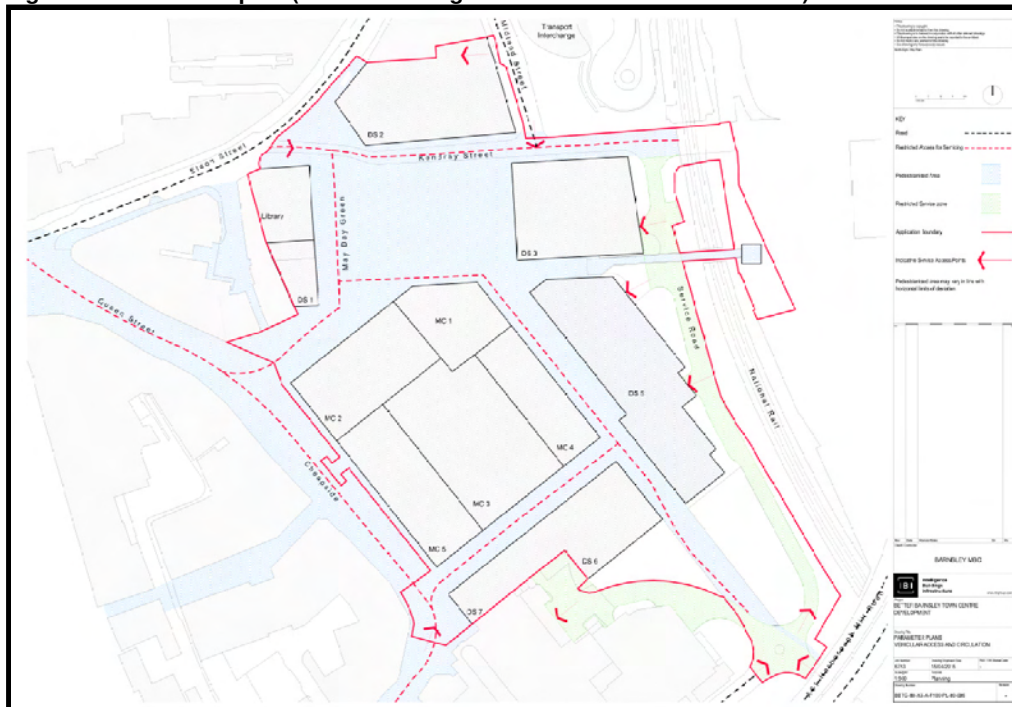
The existing site is serviced via a ramp from Kendry Street, and as part of the redevelopment it is proposed to provide a new service road which will run parallel to the railway with access from both Kendry Street and Lambra Road.

### 2.4 Masterplan

The proposed layout of the site can be given as follows with reference to IBI drawing BBTC-IBI-XX-A-F100-PL-00-006.

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Transportation

Figure 2 – Site Masterplan (Ref IBI drawing BBTC-IBI-XX-A-F100-PL-00-006)



As can be seen from the above the site will feature excellent pedestrian permeability with a direct connection via Midland Street to the Interchange, which is only approximately 200m from the centre of the site as well as links into the wider town centre via Cheapside and Eldon Street.

### **3 Transport Policy**



Capabilities on project:  
Transportation

## 3 Transport Policy

### 3.1 Introduction

This section of the Transport Assessment sets out the policy context within which the proposal has been developed.

National transport and planning policy seeks to support the promotion of accessibility by all travel modes, particularly those sustainable modes. The following documents have been reviewed:

- The Transport White Paper (2011);
- National Planning Policy Framework (2012);
- South Yorkshire Third Local Transport Plan (LTP) (2011 – 2026);
- Barnsley Core Strategy; and
- Barnsley Sustainable Community Strategy

### 3.2 National Policy

*The Transport White Paper (2011)*

The January 2011 Transport White Paper: “Creating Growth, Cutting Carbon – Making Sustainable Local Transport Happen” sets out the Government’s vision for a sustainable local transport system. The White Paper acknowledges that transport provision is essential for economic growth if the Government is to improve the economic deficit which it is currently facing. The Paper also recognises however, that the current levels of carbon emissions from transport cannot be sustained if the nation is to meet its national commitments on climate change mitigation as well as creating a safer and cleaner environment in which to live. With this in mind, the Government highlights sustainable transport solutions as a means by which the economy can grow, whilst also bringing about a positive impact on the environment.

Within the Paper, sustainable transport considers more than just public transport, walking and cycling schemes and acknowledges that it is not feasible for some trips to be undertaken by these modes. There is therefore a realisation that the car will continue to be an important mode of transport and a focus should be given to making car travel greener through electric and other low emission vehicles.

The proposed development is considered to accord with the aspirations of the White Paper as it is supplied by a range of sustainable transport links, including public transport, public footpaths and cycle routes. The implementation of a Travel Plan will also encourage users of the site to travel sustainably.

*National Planning Policy Framework (NPPF)*

The National Planning Policy Framework (NPPF) which superseded the Planning Policy Guidance Notes in 2012 assessed governed national policy and principles relating to specific aspects of the town planning framework. In replacing the previous guidance notes and remaining a material consideration in planning applications, the NPPF provides a framework for local communities and Authorities to develop relevant local development plans and strategies.

The NPPF has two key themes:

- Providing a greater level of integration and simplification of the planning policies governing new development nationally; and
- Contributing to the achievement of sustainable development from an economic, social and environmental perspective.

Chapter 4 ‘Promoting Sustainable Transport’, states that all developments which generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major public transport infrastructure;

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- Safe and suitable access to the site can be achieved for all people; and
- Improvements can be undertaken within the transport network that costs effectively limit the significant impacts of the development.

Developments should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe. This Transport Assessment seeks to demonstrate that the impact of the development proposals, in terms of transport, are not severe, and should therefore be approved.

### 3.3 Local Policy

*South Yorkshire Local Transport Plan 2011 – 2026*

The Local Transport Plan and the 'Sheffield City Region Transport Strategy' (SCRT) defines the priorities for the transport system for the next 15 years. It includes overarching aims as follows:

- Supporting economic growth;
- Enhancing social inclusion and health;
- Reducing emissions; and
- Maximising safety.

To achieve the overarching aims, the document identifies strategic policies. The most relevant policies for this development are:

- To focus new development along key public transport corridors and in places adjacent to existing services;
- To develop public transport that connects people to jobs and training in both urban and rural areas;
- To develop user-friendly public transport;
- To ensure public transport is accessible to all;
- To reduce carbon emissions;
- To encourage active travel and develop high quality cycling and walking networks;
- To provide information and travel advice for the users of all modes of transport, so that they can make informed travel choices; and
- To encourage safer road use and reduce casualties on the roads.

A series of actions are also mentioned which will support the policies outlined above:

- New links to major regeneration areas will be created to facilitate employment opportunities;
- More travel options will be given to people using a range of public transport enhancements (additional train, tram vehicles, etc);
- Pedestrian-friendly streets and footpaths will be designed as well as a continuous cycling network. The council will also support car clubs and car sharing schemes, making information about these travel options easy to find.
- The approach to traffic management in urban centres will acknowledge the importance of parking provision to local businesses, and the vulnerability of local economies to restricted access by car.

*Barnsley Core Strategy (2011)*

The government introduced a new planning system through the Planning and Compulsory Purchase Act 2004 that aims to respond more quickly to changing circumstances. As a result of these reforms Development Plans are being replaced by Local

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Development Frameworks. The Barnsley Local Development Framework (LDF) follows national and former regional guidance but reflects local views and the situation in Barnsley. It establishes policies and proposals for the development and use of land up to the year 2026. It will be used when considering planning applications and to co-ordinate investment decisions that affect the towns, villages and countryside of Barnsley.

There are a number of key principles that have guided the preparation of Barnsley Core Strategy:

- Regard to and alignment with national, regional and local strategies and One Barnsley's Sustainable Community Strategy
- Regard to national planning policy
- The impact of the spatial strategy and policies on sustainability and climate change issues
- Deliverability to ensure proposals are achievable within the plan period (to 2026)
- Infrastructure requirements to ensure that proposals and policies are adequately supported by existing or planned infrastructure.
- Regard to the comments received through the process of adopting the Core Strategy.

Because access and sustainable travel are such important elements of achieving sustainable development, Barnsley's Transport Strategy is part of the LDF. The key principles and strategic policies are included in this chapter and are embedded throughout the Core Strategy. There are no sites allocated in the Core Strategy, however any specific site proposals would be evidence based and shown on the Proposals Maps which will accompany the Development Sites and Places DPD.

As explained in the Climate Change Section and Policy CSP1, reducing the impact of climate change is a key objective of the Core Strategy. In response to this challenge, the policies included in this Transport Strategy aim to contribute to the reduction in transportation related greenhouse gas emissions.

The overall aim for sustainable travel is firstly to reduce the need to travel, but where travel is necessary to make it easy for people to move between home, work, health, community and leisure facilities by walking, cycling, or where necessary using public transport. We want to reduce the need for individuals with a car to use it for these journeys. We also need to ensure that everybody has a real alternative option, other than the car.

However we recognise that some journeys will need to be made by road, including the movement of freight. Where these journeys are necessary we want to make sure the existing road network is used more efficiently, supporting a good bus network, allowing public transport, cars and freight to move quickly between their destinations, both within and outside the borough. This will have the added benefit of improving local air quality.

Achieving these aims will need us to change our travel behaviour, but by encouraging these 'smarter choices' and efficient movement, this strategy will also play a part in improving local prosperity, health, quality of life and reduce the impact of climate change. It aims to minimise the impact of travel on the environment and will help to reduce Barnsley's carbon emissions.

These aims are also reflected in the ambitions of the Sustainable Community Strategy, which realises the importance of having a high performing integrated transport system (Ambition 10) and recognises the role transportation can play in helping Barnsley to become a strong, healthy and just society. It recognises transport's role in reducing high levels of obesity, particularly among children, by facilitating a major increase in walking and cycling through the Fit for the Future programme, created to improve health and reduce health inequalities in Barnsley (Ambition 5).

In addressing these aims for accessible, inclusive and sustainable travel, Barnsley's Transport Strategy is consistent with the national goals set out in 'Delivering a Sustainable Transport System' (Department for Transport, November 2008) and Local Transport Plan guidance.

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*Barnsley Town Centre Area Sustainable Community Strategy*

Published by Barnsley's Local Strategic Partnership, the Community Strategy sets out a strategic vision for the borough with Barnsley as a '21<sup>st</sup> century market town' at its heart.

Transport plays a role in that strategy by supporting:

- The economy by improving access to jobs and services;
- Inclusion through the support of community regeneration and quality of life; and
- The environment by reducing carbon footprint.

The strategy aims to reduce congestion and car dependency, whilst increasing walking, cycling and public transport use through the use of park and ride initiatives and travel planning.

As can be seen from the sections above, the proposed development site accords with both National and Local planning policy guidance.

## 4 Existing Conditions



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Transportation

## 4 Existing Conditions

### 4.1 Introduction

This section of the Transport Assessment sets out the location of the proposed development and provides a summary of the existing highway conditions within the vicinity of the site.

### 4.2 Site Location

Barnsley Markets is located approximately 150m to the South of Barnsley Interchange, off Cheapside to the West and Kendray Street to the North. The second site is CEAG which consists of a proposed surface level car park located approximately 100m to the south of Barnsley Interchange, off Kendray Street.

The site is broadly bound by Eldon Street and Midland Street to the north, Queen Street and Cheapside to the west, the Alhambra Centre to the south and the Wakefield – Barnsley – Sheffield railway to the east.

It currently has an in only access to the existing multi storey car park across then Kendray Street level crossing, as shown on Photographs 1 and 2 below, with the service access from Kendray Street also shown on photograph 1.

#### Photograph 1 – Existing in-only access



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**Photograph 2 – Existing Kendray Street level crossing**



To the west Kendray Street forms a link into the town centre forming a link into the town centre and is split into two distinct sections. The first section is one way eastbound from its junction with Midland Road to the level crossing, and the second is one way westbound with a continuation of Midland Street forming a one way section to the junction with Eldon Street.

Midland Street runs past the Interchange and is one way southbound and is restricted to access only and continues onto Kendray Street as the priority movement. This is then shown on photographs 3 and 4 below.

**Photograph 3 – Kendray Street looking East at the junction with Eldon Street**



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**Photograph 4 – Midland Street looking South**



Kendray Street the continues as a two way road to the east of the level crossing passing under the A61 Harborough Hill Road, which has all direction slip roads which form priority junctions, to then form a priority junction with Lambra Road, and this is shown on the photographs below:

**Photograph 5 – Pontefract Road looking North**



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**Photograph 6 – Pontefract Road looking South**



**Photograph 7 – Lambra Road looking towards Pontefract Road**



Lambra Road then continues north and passes underneath the A61 Harborough Hill Road to then form a priority junction with Wesley Street, it then continues to form a mini roundabout which then allows access into both the Alhambra Centre and the site, and this is shown on the following photographs.

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**Photograph 8 – Lambra Road / Wesley Street junction**



**Photograph 9 – Lambra Road / Service Access mini roundabout**



Wesley Road then continues to join the Alhambra roundabout, which is a four arm at grade junction forming part of the “ring road” around Barnsley town centre. It is formed by the A628 West Way to the west, Sheffield Road to the south, the A61 Harborough Hill Road to the east and Wesley Street to the north, and is shown on the following photographs.

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**Photograph9 – Alhambra Roundabout – Wesley Street approach**



**Photograph9 – Alhambra Roundabout – A628 approach**



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**Photograph 9 – Alhambra Roundabout – Sheffield Road approach**



Wesley Street and Lambra Road therefore form the primary accesses into to the existing site from the west and south.

#### **4.3 Traffic Data**

Base traffic data was collected at the following junctions on Friday 13<sup>th</sup> June and Saturday 14<sup>th</sup> June 2015 between 1600 and 1830 and 1000 and 1600 respectively:

- Kendry Street / Schwasbisch Grund Way;
- A628 Pontefract Road / Lambra Road;
- Lambra Road / Wesley Street;
- A628 Harborough Hill Road / Wesley Street / A61 Sheffield Road – Alhambra Roundabout
- A61 Sheffield Road / Union Street / Taylor Row;
- A61 Sheffield Road / A6133 Park Road, and
- A628 Dodworth Road / Shambles Street / A628 / Racecommon Road – Townend Roundabout.

We also undertook a 12 hour ATC between 0700 to 1900 on both the Friday and a Saturday at the following locations in order to quantify the existing demand at the multi storey car park.

- Ramped entrance up to the car park from kendry Street, and
- Ramped entry and exit to and from the car park from the end of Lambra Road

The 2015 base traffic flows are shown in **Appendix C**.

We have then growthed the above traffic flows to a design year of 20120, which is 5 years post the registration of the planning application, using the following growth rates

2015 to 2020 Weekday PM Peak – 1.0732

2015 to 2020 Saturday Peak – 1.0745

The 2020 base traffic flows are included in **Appendix C**.



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The accidents at the Alhambra roundabout can be summarised by type and year as follows:

**Table 1 – Alhambra Roundabout accident data**

	2010	2011	2012	2013	2014	2015	Total
<b>Lane Change</b>	1			1			2
<b>Pedestrian</b>			2	1			3
<b>Rear Shunt</b>	2		5	2	2		11
<b>Fail to give way</b>				1	1		2
<b>PSV</b>				1			1
<b>Total</b>	3	0	7	6	3	0	19

As would be expected the majority of the accidents at this junction are rear shunt types, although all have been of slight severity and whilst any accident is obviously undesirable this is not considered to constitute an accident problem.

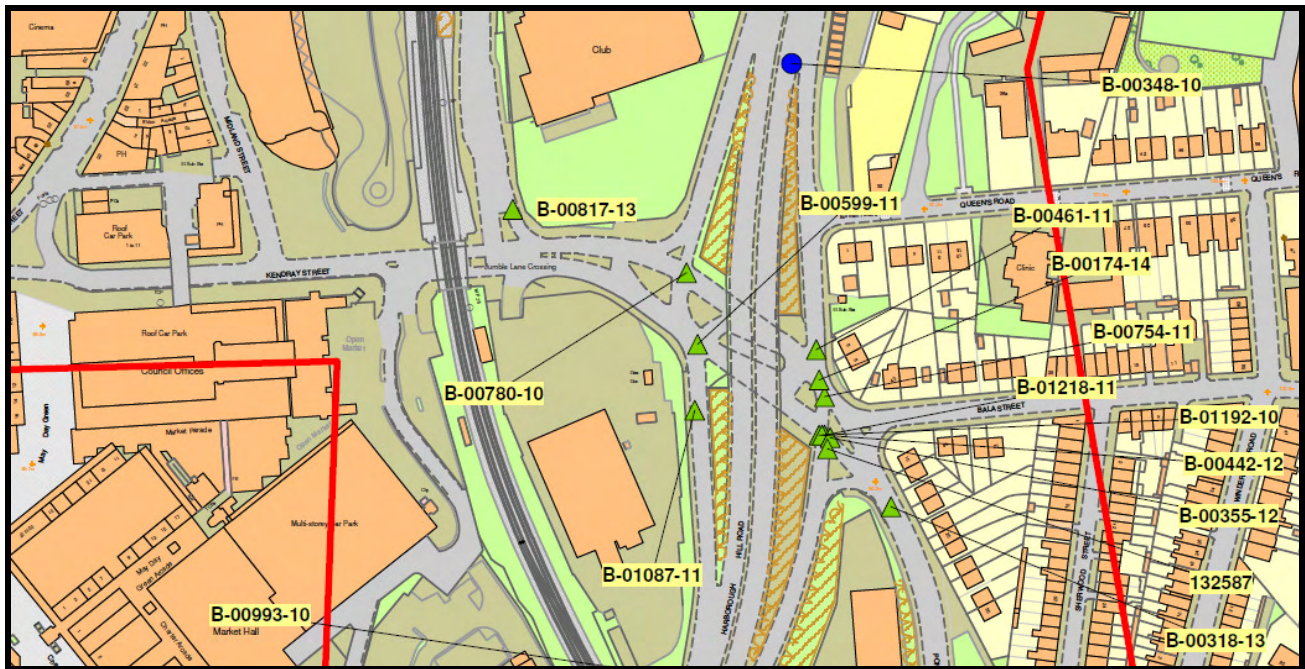
The 2 slight severity accidents at the Wesley Street / Lambra Road junction occurred twice in 2013 as a result of a failure to give way and in 2010 where a rear shunt occurred as vehicle waited to turn left.

At the Pontefract Road junction the accidents occurred as a result of a rear shunt in 2010, a pedestrian being struck in 2011 and right turn manoeuvre without giving way in 2011.

It is therefore not considered that an accident problem currently exists at the Wesley Street / Lambra Road or the Pontefract Road junctions.

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Figure 9 – Kendray Street – Accident data



As can be seen there have been a total 13 slight severity accidents in the vicinity of the site along Kendray Street in the previous 5 years, of which all have occurred at the sliproad junctions with the A61 Harborough Hill. Therefore, again, whilst any accident is obviously undesirable this is not considered to constitute an existing accident problem at this junction.

It is therefore considered that there are no existing road safety or accident problems that would be exacerbated by the addition of the development traffic.

**4.5 Committed Development**

The only committed development that has been included is the approved car park on the adjacent CEAG site which will be linked into the site and will provide 173 car parking spaces.

The traffic flows have been taken from the previous supporting information, which in fact allowed for a total of 250 parking spaces, and we have not reduced the flows to take account of the new total. This will therefore provide a level of robustness to the assessments.

## 5 Sustainable Access





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Transportation

**Table 2: Suggested Acceptable Walking Distance**

	Commuting (m)
Desirable	500
Acceptable	1000
Preferred maximum	2000

With reference to the above table the desirable walking distance to a school or place of work is considered to be 500m, an acceptable distance of 1,000m and a preferred maximum of 2,000m. As before, a 2km Walking Isochrone plan has been provided at **Appendix A**, showing the acceptable walking distance catchment area from the site

As can be seen the majority of central Barnsley is included within the 2km walking isochrone. The highway network adjacent to the site is considered to have good pedestrian linkages with facilities to allow pedestrians to cross away from traffic or via controlled crossings.

The Alhambra roundabout has both at grade pedestrian crossings as well as underpasses under the roundabout, with full pedestrian facilities at the New Street / Upper New Street traffic signal controlled junction. To the north, pedestrian crossings are provided across both Shambles Street and Eldon Street, with the areas to the west being pedestrianised.

It can therefore be seen from the above sections that there are excellent existing facilities for pedestrians to access the development site.

### **5.3 Access using Public Transport**

#### **Bus**

Barnsley Interchange is located to the immediate north of the site and combines both the bus and rail station, thus providing an excellent facility to encourage alternative modes of travel.

An extract from the Barnsley MBC bus map is shown in **Figure 4** and as can be seen the site is partly within a 5 minute walk and entirely within a 10 minute walk from the Interchange.

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Figure 4 – Town Centre Extract from the Bus Map



The bus station features the latest in technology such as the SYPTTE scheme of "Your Next Bus", tracking buses with GPS to check what time they are due to arrive and depart, thus providing a greater level of certainty for users.

Bus services departing Barnsley Interchange can be found in **Appendix A**, but as would be expected this provides a number of high frequency services to all areas of Barnsley as well as the surrounding area.

It is therefore considered that the site is highly accessible by bus.

### 5.3.1 Rail

With reference to paragraph 6.16 of the IHT document *Planning for Public Transport in Developments* it is stated that "people have been found to be willing to walk about twice as far to or from a station than a bus stop; up to about 800m for rail compared to about 400m for a bus"

The nearest train station to the development is Barnsley Interchange located approximately 200m to the north of Barnsley Town Centre.

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The station benefits from a manned ticket office, which is open to the public between 0600 and 1930 Monday – Saturday and 0845 – 1900 on Sunday, and the station provides a direct link to services from Leeds, Wakefield Kirkgate and Sheffield as well as other services as highlighted in **Table 3**.

**Table 3-Rail Services**

Station	Route (Main Stations)	Mon - Fri	Sat	Sun
Barnsley Interchange	Wakefield Kirkgate - Leeds	30 mins	30 mins	60 mins
	Wakefield Kirkgate – Castleford - Leeds	60 – 120 mins	60 – 120 mins	120 mins
	Meadowhall - Sheffield	30 mins	30 mins	60 mins
	Sheffield – Chesterfield - Nottingham	60 mins	60 mins	60 mins
	Denby Dale – Honley Huddersfield	60 mins	60 mins	60 mins

The above services combine to provide up to seven trains per hour between Monday and Saturday and up to five trains per hour on Sunday.

It is therefore considered that the site is highly accessible by rail and this provides a realistic alternative to the use of the private car.

#### 5.4 Access for Cyclists

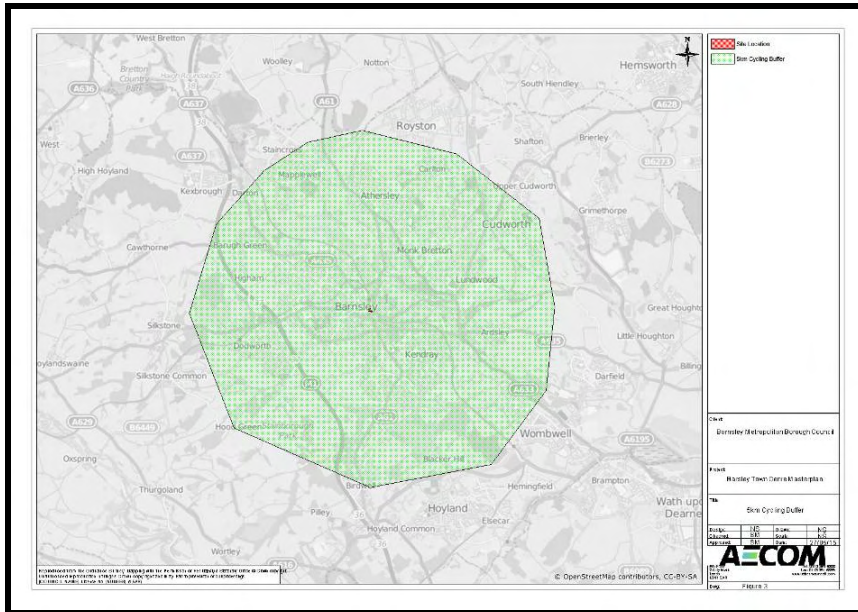
Cycling is a viable and sustainable mode of transport to the site. Whilst PPG13 has been replaced, it is still widely regarded and states that

“Cycling also has the potential to substitute for short car trips, particularly those less than 5km and to form part of a longer journey by public transport”.

It is widely considered that cycle use provides a viable means of transport for journeys up to 5km. **Figure 5 of Appendix A** illustrates the recommended 5km cycle isochrone around the site. Within a 5km cycle distance lie the residential areas of Dodworth, Athersley, Cudworth and Kendray where it is likely that people would cycle from to the site.

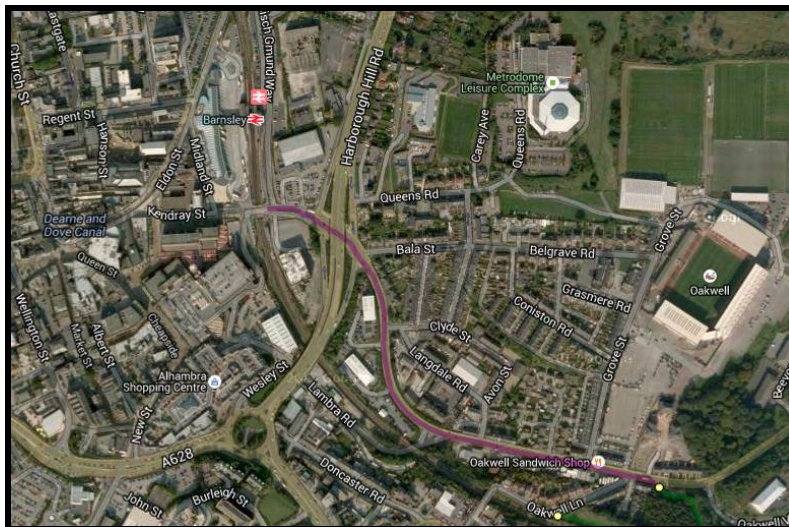
Capabilities on project:  
Transportation

Figure 5 – 5km Cycling Isochrone



With reference to the Sustrans website there is an on road route along Pontefract Road just to the east of the Kendray Street level crossing, and this is shown below for ease of reference:

Figure 6 – Sustrans cycle route information



We would therefore consider that the site is accessible by cyclists and that this can provide a realistic alternative to the private car.

## **6 Trip Generation and Distribution**



Capabilities on project:  
Transportation

## 6 Trip Generation and Distribution

### 6.1 Introduction

This section of the Transport Assessment outlines the anticipated traffic generation and distribution associated with the development proposals. The trip generation methodology has been agreed by Barnsley Metropolitan Borough Council, and can be set out as follows.

### 6.2 Retail Trip Generation

As mentioned previously the existing market / retail units are to be replaced by new units and as such the proposed trip generation has been based upon the existing vehicle trips to the site as identified from the recent surveys.

Currently access is taken from an in only from Kendray Street and an in and out from Lambra Road and from the ATC data the following trip generation in the peak hours can be identified:

**Table 4: Existing Kendray Street Peak Hour generation**

	IN	OUT	TWO WAY
PM	9	N/A	9
SAT	23	N/A	23

**Table 5: Existing Lambra Street Peak Hour generation**

	IN	OUT	TWO WAY
PM	3	36	39
SAT	220	243	463

The existing site therefore generates a total of 9 and 23 two way trips from the Kendray Street entrance in the weekday PM and Saturday respectively. With the Lambra Street generating 39 and 463 two way trips

The above is based upon an existing floorspace of 17,731sq.m compared to a proposed total floorspace of 42,500sq.m, and increase of 24,769sq.m.

This increase represents a 140% increase in overall floorspace, although it is widely acknowledged that the new floorspace will not generate traffic at the same rate as the existing, with the increase providing a better quality environment which will allow customers to spend longer in the town centre.

Therefore, as agreed within the previous report in support of the town centre redevelopment, this overall increase has been reduced by 50% in order to assess the potential increases in traffic.

Therefore, based upon a 70% uplift the levels of additional traffic associated with the retail / market development can be given as follows:

**Table 6: Additional Retail / Market Kendray Street Peak Hour Generation**

	IN	OUT	TWO WAY
PM	6	0	6
SAT	16	0	16

From Table 6 above, it can be seen that the traffic generated by the additional retail / market space from Kendray Street would amount to 6 two-way vehicle movements in the Friday PM peak hour and 16 two-way vehicle movements in the Saturday peak hour.

Capabilities on project:  
Transportation

**Table 7: Additional Retail / Market Lambra Road Peak Hour Generation**

	IN	OUT	TWO WAY
PM	2	25	27
SAT	154	170	323

From **Table 7** above, it can be seen that the traffic generated by the additional retail / market space from Lambra Road would amount to 27 two-way vehicle movements in the Friday PM peak hour and 323 two-way vehicle movements in the Saturday peak hour.

It should be noted that we have assumed therefore that the additional traffic generated by the proposed expansion of the retail and market offer is an uplift from the existing vehicle trips. However, we have also included the traffic from the committed CEAG car parking development site, which will also reflect trips to and from the market area.

Therefore, the above methodology whereby we have uplifted the existing market trips and included the CEAG traffic is considered to represent an extremely robust methodology.

### 6.3 Cinema Trip Generation

A robust interrogation of the TRICS 7.1.2 database has been undertaken to provide trip rates for development sites within Barnsley Town Centre. These trip rates have been used to calculate an estimated trip generation for each site and are presented in **Table 8**.

**Table 8 – Friday and Saturday Cinema Trip Generation**

	Arrivals	Departures	Two Way
<b>Friday PM</b>	14	11	25
<b>Saturday</b>	35	30	65

From **Table 8** above, it can be seen that the traffic generated by the proposed cinema development would amount to 25 two-way vehicle movements in the Friday PM peak hour and 65 two-way vehicle movements in the Saturday peak hour. It should also be noted that the above calculations make an allowance for linked trips; indeed very few peak hour trips associated with the cinema are considered as being 'new' to the network. In reality a significant proportion are likely to be trips that are also visiting another destination within the town centre as well as the cinema itself. As such, 30% of the original associated trips have been included within the assessment, and this has been agreed with BMBC.

TRICS outputs for each land use are contained in **Appendix D** for consideration. Trip rates shown are per 100m<sup>2</sup> of floor area. It is noted that the peak arrival and departure time is between 1600 – 1700.

### 6.4 Library Trip Generation

The same process has been undertaken in order to calculate trip rates for the proposed Library development. It should be noted however, that as with the proposed cinema development, these calculations have made an allowance for linked trips, as a significant proportion are likely to be trips that are also visiting another destination within the town centre as well as the library itself. However, for ease of viewing, vehicle trip generation associated with the library development are shown in **Table 9**.

**Table 9 – Friday and Saturday Library Trip Generation**

	Arrivals	Departures	Two Way
<b>Friday PM</b>	41	47	88
<b>Saturday</b>	41	47	88

From **Table 9** above, it can be seen that the traffic generated by the proposed library development would amount to 88 two-way vehicle movements in the Friday PM peak hour and 88 two-way vehicle movements in the Saturday peak hour. Although as mentioned above it is assumed that all would be part of a linked trip associated with the town centre, and this has been agreed with BMBC.



Capabilities on project:  
Transportation

Figure 9 – Saturday Peak Lambra Road Development Distribution

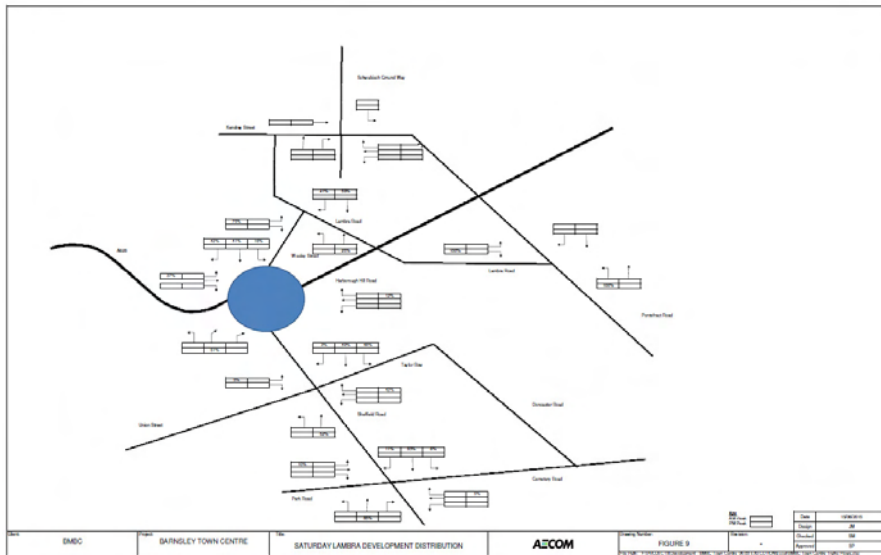
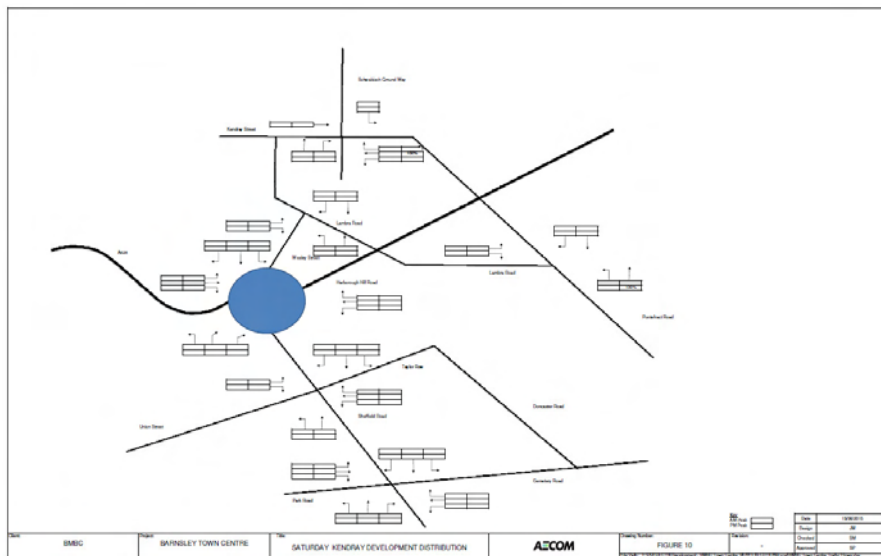


Figure 10 – Saturday Peak Kendray Street Development Distribution



6.6 Development Flow Diagrams

Traffic flow diagrams are located at **Appendix C**, indicating the relevant flows at each of the key junctions located in the area of the site. These figures show flows for both 2015 Base year and 2020 Base year plus additional committed development and development traffic generated by the Barnsley Town Centre development site. Listed below are the related figures:

- Figure 11 2015 Base

Capabilities on project:  
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- Figure 12 2020 Base
- Figure 13 Development Traffic
- Figure 14 2020 Base + Committed Development + Proposed Development Traffic

## 7 Operational Assessments



Capabilities on project:  
Transportation

## 7 Operational Assessments

### 7.1 Introduction

As agreed with Barnsley Metropolitan Borough Council, operational assessments have been undertaken at the following junctions:

- Schwabisch Gmund Way / Kendray Street;
- Alhambra Roundabout;
- Wesley Street / Lambra Road; and
- Pontefract Road / Lambra Road.

The results of the assessments can then be set out as follows, and it must be noted that these represent a robust assessment due to the following:

- The vehicle trip generation has included both an uplift in the existing trips to the site plus the full trips to the CEAG car park, whereas in reality the trips to the CEAG car park would represent a significant proportion of the uplifted trips;
- The CEAG traffic has been based upon the previous proposal of 250 spaces, whereas only 173 spaces are now proposed, and
- We have assumed that the level crossing would remain open in the modelling of the Schwabisch Gmund Way / Kendray Street junction but have redistributed trips away from the level crossing in the assessment of the other junctions.

### 7.2 Software Packages

The roundabout junction within the vicinity of the site has been modelled using the JUNCTIONS software, while priority junctions have been modelled using PICADY 5 software. JUNCTIONS 8 and PICADY 5 use Ratio of Flow Capacity (RFC) to measure the capacity of a junction. RFC values of 0.85 or less are considered to indicate the acceptable operation of the junction, values between 0.85 and unity represent variable operation (i.e. possible queues building up on approaches and increases in vehicle delay) and RFC values in excess of 1 represent overloaded conditions. Each approach also had a mean maximum queue (MMQ) value, which is the mean maximum number of vehicles expected to queue on the approach at the worst time period of operation.

LINSIG has been used to model the signalised junction at Schwabisch Gmund Way / Kendray Street, as well as the two mitigation schemes, where by individually assessing the operational capacity for each of the scenarios, we will examine the impact in terms of practical reserve capacity (PRC), whereby a scenario with a positive PRC value indicates that the junction is within operational capacity, and Degree of Saturation (DoS), where this indicates the a percentage capacity saturation.

The junctions above have then been for the following scenarios:

- 2015 Base
- 2020 Base
- 2015 Base + Committed Development + Proposed Development Traffic
- 2020 Base + Committed Development + Proposed Development Traffic

### 7.3 Alhambra Roundabout

The Alhambra roundabout is a four arm at grade junction forming part of the “ring road” around Barnsley town centre. It is formed by the A628 West Way to the west, Sheffield Road to the south, the A61Harborough Hill Road to the east and Wesley Street to the north.

The Alhambra four arm roundabout has been modelled using JUNCTIONS for the four scenarios during both the 2015 and 2020 evening peak hours. The results are shown within the following tables, with the full output being included within **Appendix E1**.

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**Table 10: 2015 PM / 2020 PM Peak Scenario Results**

Approach	2015 Base		2020 Base	
	RFC	Queue	RFC	Queue
Wesley Street	0.72	2	0.85	5
Harborough Hill Road	0.74	3	0.81	4
Sheffield Road	0.69	2	0.76	3
A628	0.81	4	0.89	7

**Table 11: 2015 Saturday / 2020 Saturday Peak Scenario Results**

Approach	2015 Saturday Base		2020 Saturday Base	
	RFC	Queue	RFC	Queue
Wesley Street	0.46	1	0.53	1
Harborough Hill Road	0.78	3	0.86	6
Sheffield Road	0.66	2	0.73	3
A628	0.76	3	0.83	5

The results show that the junction operates well within an acceptable RFC for all scenarios apart from the A628 Arm which is 0.04 over the threshold, with a maximum queue of 7 vehicles. The highest RFC with the addition of the development flows is 0.89 along the Harborough Hill Road and A628 arms during the Saturday peak.

**Table 12: 2020 PM Base + Development / 2020 Saturday Base + Development**

Approach	2020 PM Base + Dev		2020 Saturday Base + Dev	
	RFC	Queue	RFC	Queue
Wesley Street	0.89	7	0.65	2
Harborough Hill Road	0.82	4	0.89	8
Sheffield Road	0.76	3	0.79	4
A628	0.89	8	0.89	7

Therefore, it can be seen that with the addition of the development traffic the junction is still predicted to operate at a similar level of capacity and the impact is therefore not considered to be severe.

Furthermore, it should be noted that the junction currently has “part time signals” on some approaches which will therefore improve the capacity from that given above. The above is therefore considered to represent a reasonably robust assessment.

#### 7.4 Wesley Street / Lambra Road

The Wesley Street / Lambra Road junction is currently a three arm simple priority junction, which will then be converted into a four arm mini roundabout as part of the development in order to accommodate the new service road.

The Proposed Wesley Street / Lambra Road mini roundabout junction has been modelled using JUNCTIONS in its proposed mini roundabout layout for both the 2015 and 2020 peak hours. The results are shown within the following tables, with the full output being included in **Appendix E2**.

**Table 13: 2020 PM Base + Development / 2020 Saturday Base + Development**

Approach	2020 PM Base + Dev		2020 Saturday Base + Dev	
	RFC	Queue	RFC	Queue
Lambra West	0.55	1	0.92	8
Service Road	0.09	0	0.83	4
Lambra East	0.35	1	0.62	2
Wesley Street	0.38	1	0.98	15

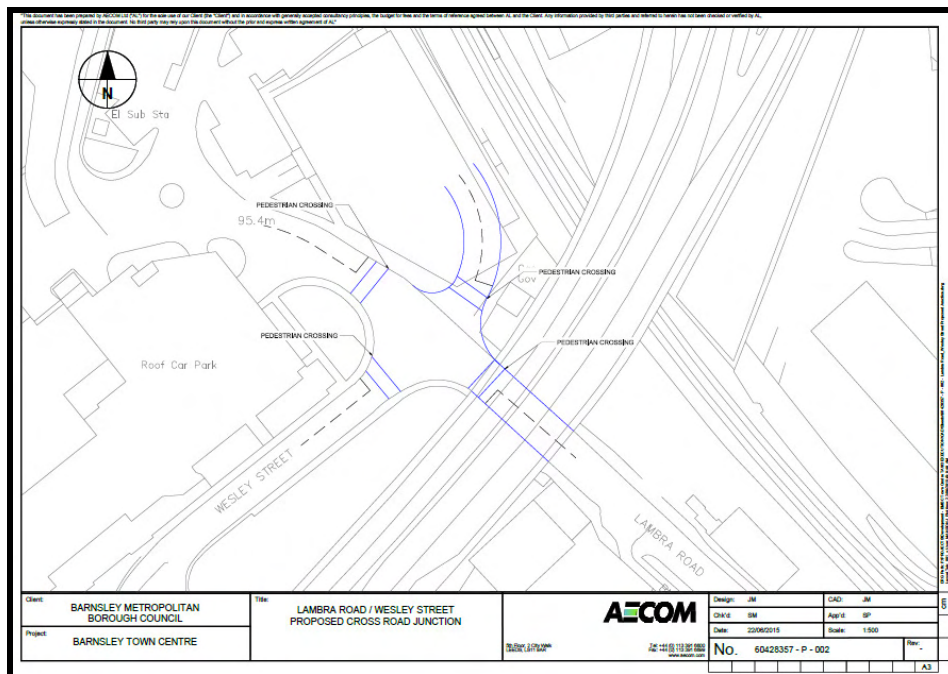
The results show that the junction operates well within an acceptable RFC for the Friday PM scenario, with a maximum queue of 1 vehicle. However, the 2020 Saturday Base + Development scenario operates above an acceptable RFC for 2 of the 4 arms

Capabilities on project:  
Transportation

with a maximum queue of 15 vehicles. The highest RFC with the addition of the development flows is 0.98 along the Wesley Street arm during the Saturday peak. This will then result in a queue on Wesley Street which would potentially interact with the Alhambra roundabout.

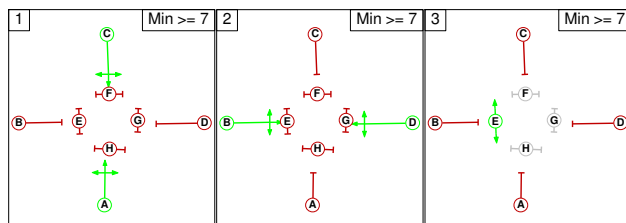
It is therefore proposed to provide a four arm traffic signalised junction instead of a mini roundabout and the layout is shown on AECOM drawing below.

**Figure 15 – AECOM drawing P - 002 – Proposed Lambra Rd / Wesley St traffic signals**



As can be seen from the above it is proposed to provide a simple signalised junction with single lane approaches on all arms with pedestrian crossings to allow full accessibility. However, due to the constrained nature of the site an "all red" pedestrian stage will be required and the staging is shown below.

**Figure 16 – Wesley St / Lambra Rd - Stage Diagram**



However, the junction has only been modelled using the scenario whereby the pedestrian stage is not called as it has been agreed with the Local Authority that this provides the most realistic assessment.

Capabilities on project:  
Transportation

For the residential areas to the south and east, the main pedestrian access is considered to be across either Kendray Street or through the Alhambra centre, with little demand via this junction. Therefore, the results assuming that the pedestrians are not called every cycle can be given as follows.

The full LINSIG output is included in **Appendix E3**, but can be summarised as follows.

**Table 14: 2020 PM and Saturday Peak Scenario Results – NO Peds every cycle**

	2020 PM		2020 Saturday	
	Deg of Sat (%)	MMQ	Deg of Sat (%)	MMQ
Lambra Road (E)	34	3	54	3
Wesley Road	33	2	83	6
Lambra Road (W)	35	2	87	6
Service Road	20	1	67	4
	Cycletime 50s PRC+154.4%		Cycletime 50s PRC +3.5%	

As can be seen the junction is now predicted to operate within capacity in both the weekday PM and Saturday peak hours, with the queue on Wesley Street not extending back to the Alhambra roundabout.

It is therefore considered that the proposed signalisation is predicted to operate within capacity based upon the more realistic assumption whereby the pedestrian “all red” is not called every cycle.

### 7.5 Pontefract Road / Lambra Road

This junction is a simple priority T junction, with the left turn from Pontefract Road being slightly relocated away from the junction by a left turn slip.

The Pontefract Road / Lambra Road junction has been modelled using PICADY for the four scenarios during both the 2015 and 2020 evening peak hours. The results are shown within the following tables, with the full output being included in **Appendix E4**.

**Table 15: 2015 PM / 2020 PM Peak Scenario Results**

Approach	2015 Base		2020 Base	
	RFC	Queue	RFC	Queue
Lambra Road	0.769	3	0.862	5
Pontefract Road (Right in)	0.020	0	0.023	0

**Table 16: 2015 Saturday / 2020 Saturday Peak Scenario Results**

Approach	2015 Saturday Base		2020 Saturday Base	
	RFC	Queue	RFC	Queue
Lambra Road	1.112	31	1.241	55
Pontefract Road (Right in)	0.059	0	0.066	0

**Table 17: 2020 PM Base + Development / 2020 Saturday Base + Development**

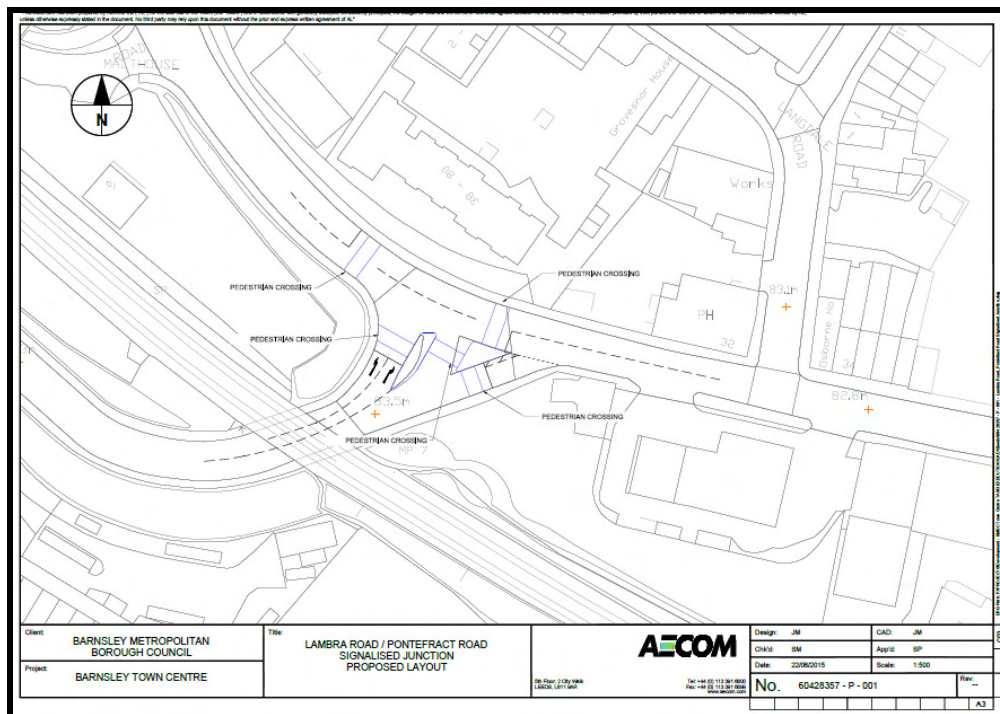
Approach	2020 PM Base + Dev		2020 Saturday Base + Dev	
	RFC	Queue	RFC	Queue
Lambra Road	0.930	8	1.667	155
Pontefract Road (Right in)	0.024	0	0.069	0

Capabilities on project:  
Transportation

The results show that the Lambra Road arm of the junction does not operate within an acceptable RFC for all scenarios, with a maximum queue of 155 vehicles. The highest RFC with the addition of the development flows is 1.667 along the Lambra Road arm during the Saturday peak.

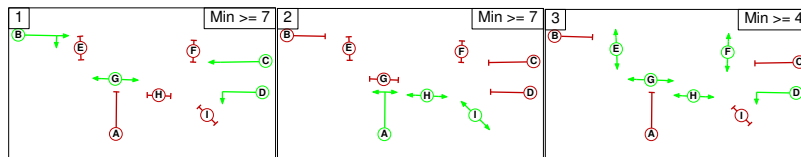
It is therefore proposed to provide traffic signals at this junction and the layout can be seen in the **AECOM drawing** which can be given below for ease of reference.

**Figure 17 – AECOM drawing P - 001 – Proposed Lambra Rd / Pontefract Rd traffic signals**



As can be seen it is proposed to provide a single lane approach on Pontefract Rd (W), with short flares on both Pontefract Rd (E) and Lambra Rd. The junction would operate on a 3 stages, as show below.

**Figure 18 – Pontefract Road / Lambra Rd - Stage Diagram**



The junction has been modelled using the above staging in the 2020 PM and Saturday peak hours and the results are included in **Appendix E5**, but can be summarised as follows.

Capabilities on project:  
Transportation

**Table 18: 2020 PM and Saturday Peak Scenario Results – NO Peds every cycle**

	2020 PM		2020 Saturday	
	Deg of Sat (%)	MMQ	Deg of Sat (%)	MMQ
Pontefract rd (E)	67	11	89	23
Lambra Rd	79	9	89	21
Pontefract Rd (W)	61	11	65	11
	Cycletime 90s PRC+14.4%		Cycle time 120s PRC +1.4%	

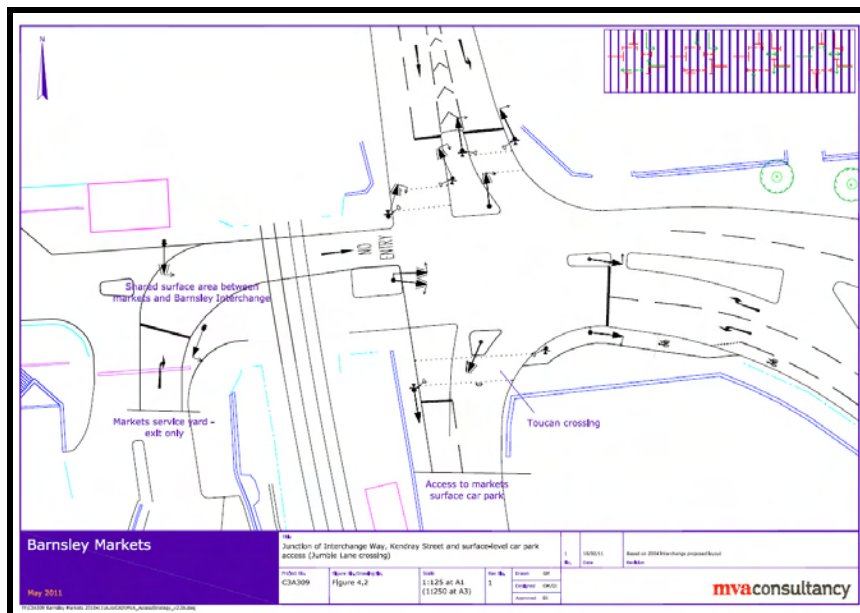
From the above all links are predicted to operate with degrees of saturation below 90% and the level of queuing can be accommodated on the network. Therefore, from the above, it is considered that the proposed traffic signalised junction

**7.6 Schwabisch Gmund Way / Kendray Street**

This is currently a three arm signalised junction, but with the construction of the CEAG development, a fourth signalised arm will be added, and this has been the subject of a separate report which was prepared by others and received a planning consent in 2011.

The proposed MVA Consultancy layout can be shown below as taken from the approval which has been already granted for s car park on the site.

**Figure 19 – MVA Consultancy Drawing – Proposed CEAG Access**



However, since that that time the proposals have been amended and the access across the level crossing will now be closed using a Traffic Regulation Order (TRO), although this cannot obviously be guaranteed as the Order may not be successful should there be a valid objection.

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We have therefore modelled the more robust scenario whereby the crossing will remain open and the traffic associated with the site will still use the crossing to gain access, and should the crossing be closed then the operation will improve as traffic will be removed and one approach would be closed.

The Schwabisch Gmund Way / Kendray Street junction has been modelled using LINSIG for the four scenarios during both the 2015 and 2020 peak hours. The results are included within **Appendix E6** but can be summarised as follows.

**Table 19: 2015 PM / 2020 PM Peak Scenario Results**

Approach	2015 Base			2020 Base		
	PRC	DoS (%)	Queue	PRC	DoS (%)	Queue
Schwabisch Gmund Way Left	68.9	39.7	6	57.2	42.6	7
Schwabisch Gmund Way Ahead		0.0	0		0.0	0
Kendray Street East Left		0.0	0		0.0	0
Kendray Street East Ahead Right		53.3	8		57.2	9
CEAG Car Park Ahead Right		0.0	0		0.0	0
Kendray Street West Ahead		43.6	3		46.9	3

**Table 20: 2015 / 2020 Saturday Peak Scenario Results**

Approach	2015 Saturday Base			2020 Saturday Base		
	PRC	DoS (%)	Queue	PRC	DoS (%)	Queue
Schwabisch Gmund Way Left	76.8	27.0	4	64.1	29.0	4
Schwabisch Gmund Way Ahead		0.0	0		0.0	0
Kendray Street East Left		0.0	0		0.0	0
Kendray Street East Ahead Right		50.9	7		54.8	8
CEAG Car Park Ahead Right		0.0	0		0.0	0
Kendray Street West Ahead		23.2	1		25.1	1

**Table 21: 2020 PM / 2020 Saturday Base + Development Scenario Results**

Approach	2020 Base + Dev			2020 Saturday Base + Dev		
	PRC	DoS (%)	Queue	PRC	DoS (%)	Queue
Schwabisch Gmund Way Left	53.0	42.6	7	62.4	30.1	4
Schwabisch Gmund Way Ahead		4.7	0		25.3	1
Kendray Street East Left		2.8	0		18.0	2
Kendray Street East Ahead Right		58.8	9		55.4	8
CEAG Car Park Ahead Right		32.1	1		54.2	3
Kendray Street West Ahead		46.9	3		25.1	1

The results show that the junction operates well within an acceptable PRC and DoS for all scenarios, with a maximum queue of 8 vehicles. The highest DoS with the addition of the development flows is 55.4% along the Kendray Street East arm during the Saturday peak.

Capabilities on project:  
Transportation

## 7.7 Summary

We have modelled the following junctions in the weekday PM and Saturday peak hours:

- Schwabisch Gmund Way / Kendray Street;
- Alhambra Roundabout;
- Wesley Street / Lambra Road; and
- Pontefract Road / Lambra Road.

The Schwabisch Gmund Way / Kendray Street is currently a 3 arm traffic signalised junction but the CEAG committed car park, which will form part of the development, will form a new fourth signalised arm onto the junction. The proposed signalised layout with the addition of CEAG has been tested and is predicted to operate well within capacity.

The Alhambra Roundabout has been tested in its current layout and is predicted to operate at a similar level of capacity in both the base and the “with development” scenarios.

The Wesley Street / Lambra Road junction is currently a simple priority junction and is currently proposed to be converted into a mini roundabout to accommodate a fourth arm which will serve the proposed car parking and act as a service road. The mini roundabout is predicted to operate with some capacity constraints and as such traffic signals are required. It has been assumed that the “all red” pedestrian stage would not be required every cycle and as such the junction is predicted to operate within capacity at the design year.

The Pontefract Road / Lambra Road is currently a priority junction and with the addition of the development trips would be predicted to operate above capacity. Therefore, it is proposed to install traffic signals as part of the proposals.

## 8 Summary and Conclusions



Capabilities on project:  
Transportation

## 8 Summary and Conclusions

This report has been prepared on behalf of Barnsley MBC in support of their proposal to redevelop the existing market and town centre.

The proposals will comprise of the following:

- 30 500m<sup>2</sup> Retail / Food & Drink (Use Classes A1, A3 & A4);
- 4 500m<sup>2</sup> Cinema (Use Class D2);
- 3 000m<sup>2</sup> Library (Use Class D1), and
- 12 000m<sup>2</sup> for the refurbished existing market development;

With access being via the existing all movements access from Lambra Road from a new service road which runs parallel to the railway. It is proposed to close the level crossing on Kendray Street, although CEAG will still take access from Kendray Street to the east of the crossing.

The development proposes the following levels of car parking:

- 174 spaces on the former CEAG site to the east of the Kendry Street level crossing and linked to the site via new footbridge over the railway;
- 194 car parking spaces retained within the existing basement of the Metropolitan Centre, with an additional 52 parking spaces, and
- 56 car parking spaces to the south of the site, with access from Lambra Road

The site has been assessed against the relevant National and Local Policy and given its proximity to the Transport Interchange in a highly accessible location then it is considered to accord with the principles of providing development in sustainable locations.

The site is located with the town centre adjacent to the Transport Interchange which allows safe and convenient access to regular bus and rail services to both residential areas within Barnsley as well as surrounding areas. It is therefore considered to be highly accessible with real alternatives for both employees and customers to the private car.

The trip generation has been derived based upon the existing vehicle movement to the centre uplifted to reflect the additional floorspace; in addition the full trip generation from the CEAG car park has also been added. This represents a robust assessment as the CEAG site will include a large proportion of the uplifted traffic. Furthermore, we have included the full trip generation from 250 spaces at CEAG, whereas only 173 spaces are now proposed.

Traffic surveys were undertaken at the following junctions on Friday 13<sup>th</sup> and Saturday 14<sup>th</sup> June in both the weekday PM and Saturday peak hours:

- Kendry Street / Schwasbisch Grund Way;
- A628 Pontefract Road / Lambra Road;
- Lambra Road / Wesley Street;
- A628 Harborough Hill Road / Wesley Street / A61 Sheffield Road – Alhambra Roundabout
- A61 Sheffield Road / Union Street / Taylor Row;
- A61 Sheffield Road / A6133 Park Road, and
- A628 Dodworth Road / Shambles Street / A628 / Racecommon Road – Townend Roundabout.

We also undertook a 12 hour ATC between 0700 to 1900 on both the Friday and a Saturday at the following locations in order to quantify the existing demand at the multi storey car park.

Capabilities on project:  
Transportation

- Ramped entrance up to the car park from Kendry Street, and
- Ramped entry and exit to and from the car park from the end of Lambra Road

The highway network was then assessed at a year of registration of the planning application, 2015 and a design year 5 years hence, 2020.

The CEAG development site has been included as a committed development with the traffic flows being taken from the report which accompanied that application. This then provides an element of robustness as this assessed 250 parking spaces whereas the current proposal is for 173 parking spaces.

The Kendry Street / Schwasbisch Gmund Way traffic signalised junction has been assessed in its proposed layout, with the addition of the CEAG development, which incorporates a new signalised arm into the existing junction. However, the junction is still predicted to operate well within capacity at the design year.

The A628 Pontefract Road / Lambra Road priority junction has been assessed in its current priority junction layout and with the addition of the development traffic is predicted to operate above capacity. Therefore, it is proposed to provide traffic signals at this junction.

The Lambra Road / Wesley Street priority junction has been modelled as a mini roundabout, as currently proposed, however, this will then queue back on Wesley Street towards the Alhambra roundabout. It is therefore proposed to provide traffic signals at this junction.

The A628 Harborough Hill Road / Wesley Street / A61 Sheffield Road – Alhambra Roundabout has been modelled using ARCADY and is considered to operate with no additional capacity problems than would occur in the base, no development, situation.

## Appendix A: Figures and Drawings



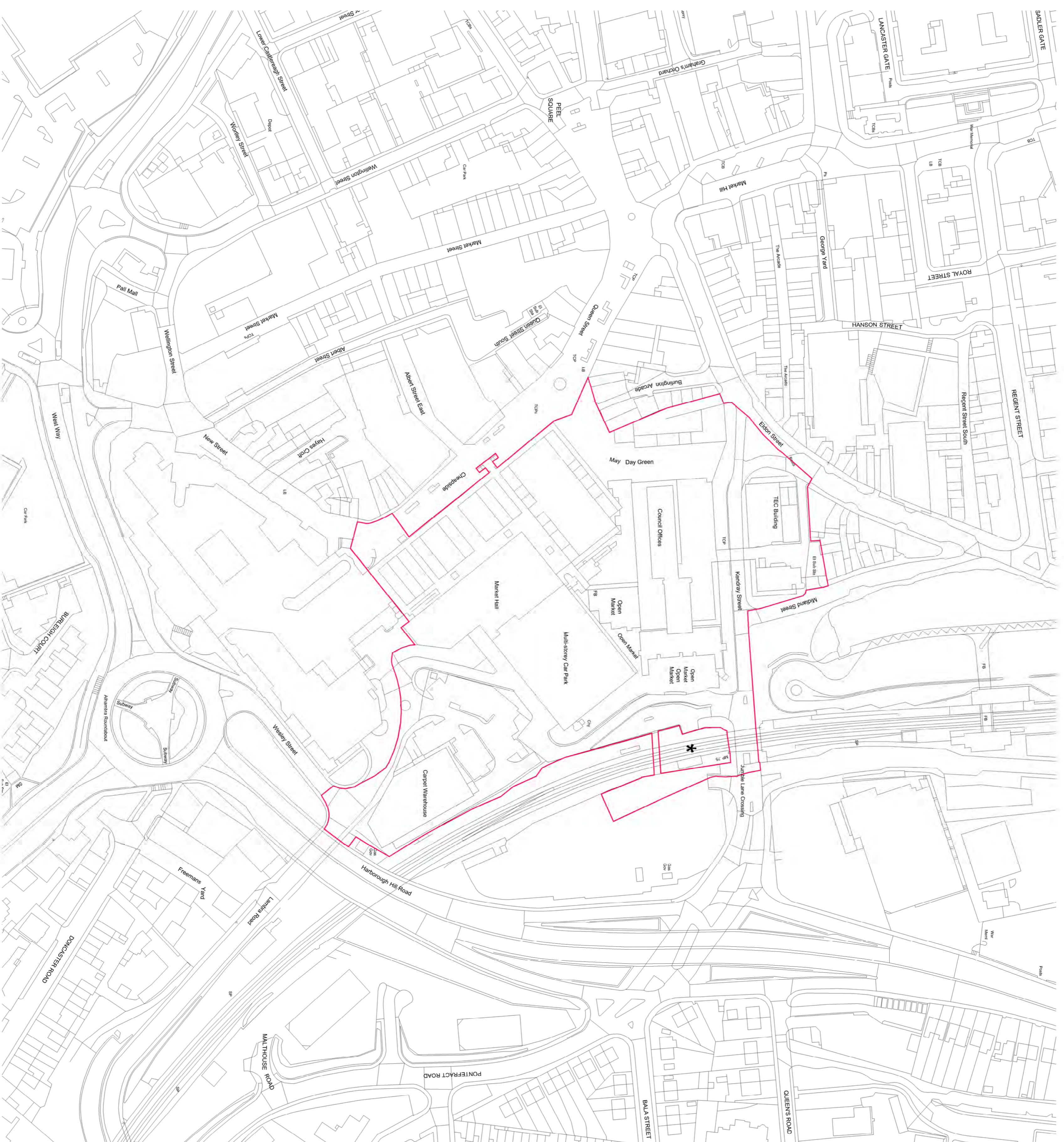
- Notes:**
- This drawing is copyright
  - Do not scale dimensions from this drawing
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North Sign / Key Plan

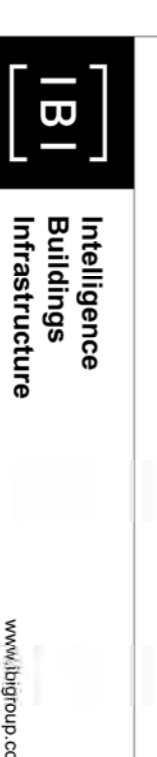


**KEY**

- Site Application Boundary
- For the avoidance of doubt this area of land is excluded from the application



Client/Contractor  
**BARNSELEY MBC**

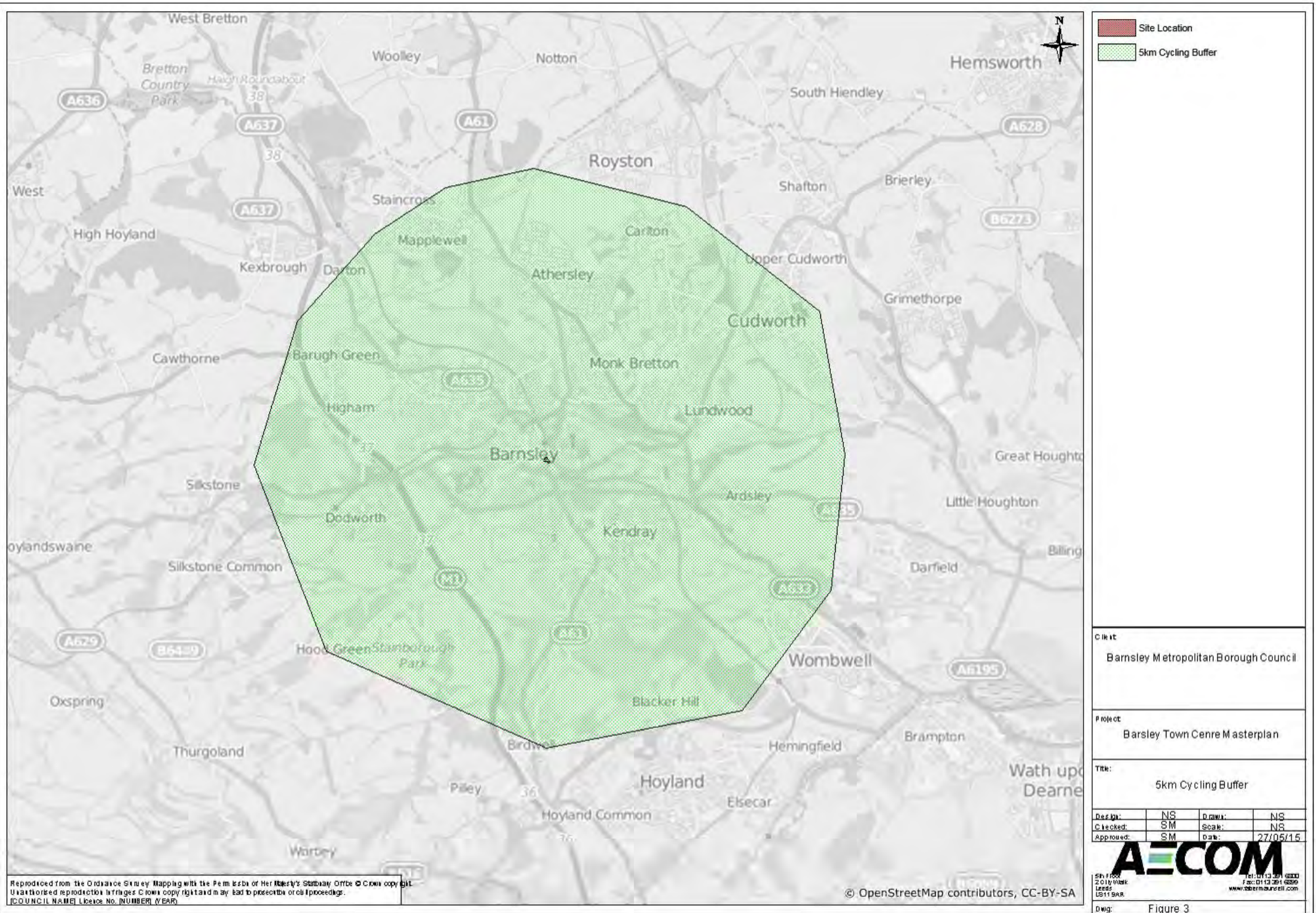


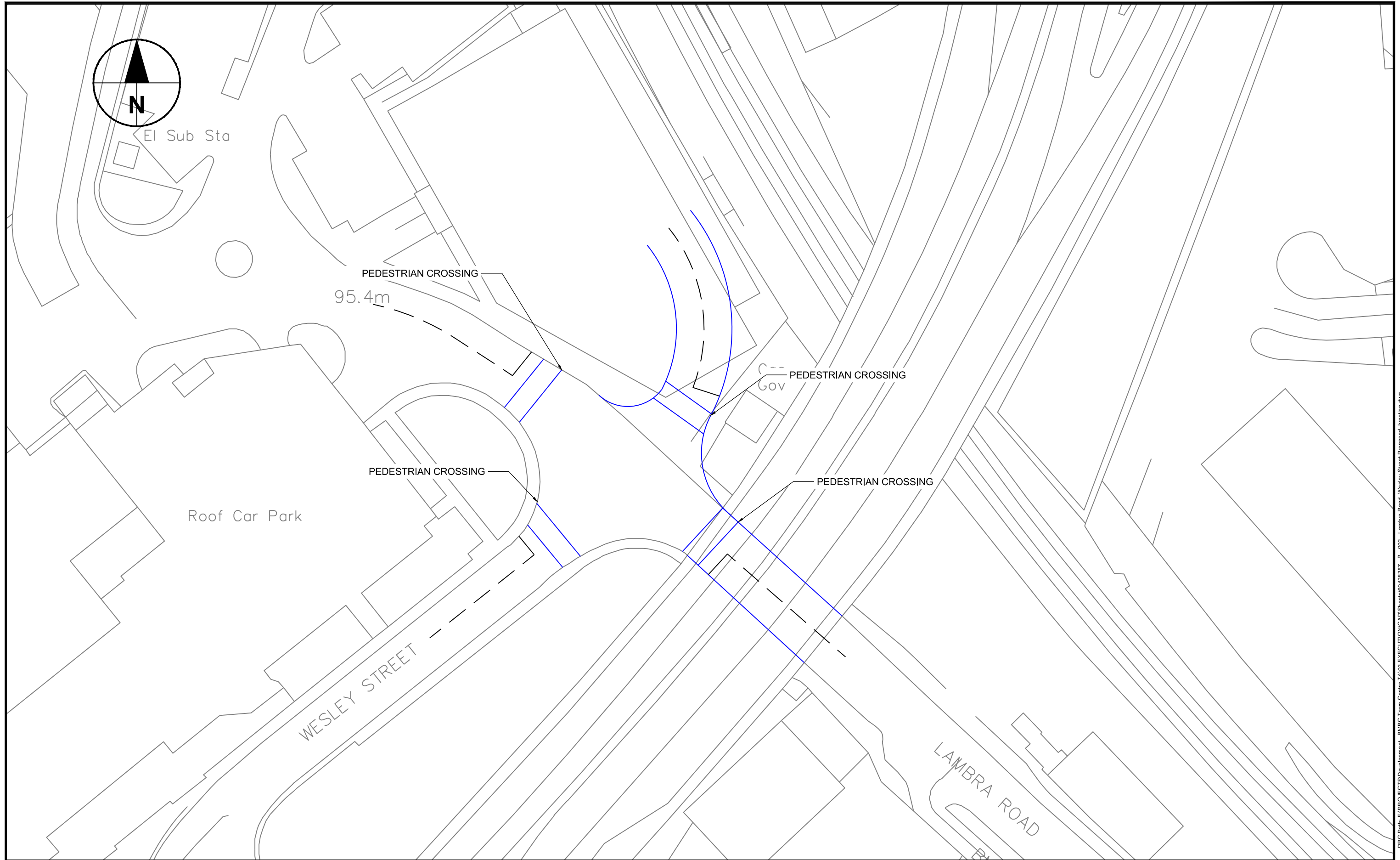
Project  
**BETTER BARNSELEY TOWN CENTRE DEVELOPMENT**

Drawing Title  
**LOCATION PLAN**


Job Number <b>6743</b>	Drawing Originated Date <b>15/04/2015</b>	PWS 1192 Status Code <b>-</b>
Scale/DA1 <b>1:1250</b>	Purpose <b>Planning</b>	Revision <b>-</b>
Drawing Number <b>BBTC-IBI-XX-A-F100-PL-00-001</b>		

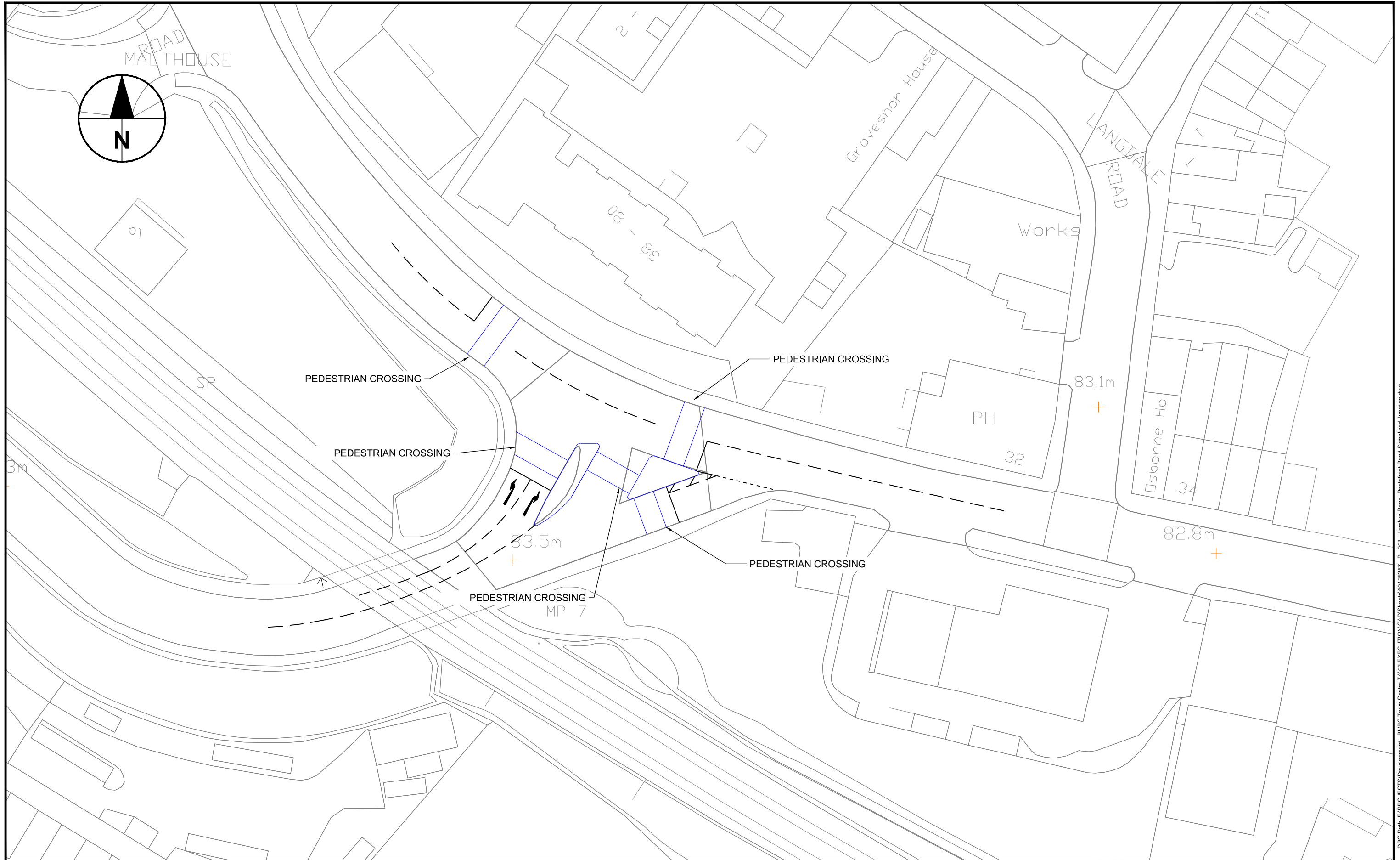






DRG Path: F:\PROJECTS\Development - BMBC Town Centre TA03 EXECUTION\CAD\Sheets\60428357 - P - 002 - Lambra Road\_Wesley Street Proposed Junction.dwg  
Layout Tab: 001 • User: MANSOJ Plot time: 22/06/2015 @ 9:48 AM

Client: <b>BARNSELY METROPOLITAN BOROUGH COUNCIL</b>	Title: <b>LAMBRA ROAD / WESLEY STREET PROPOSED CROSS ROAD JUNCTION</b>		Design: JM	CAD: JM	<b>CM</b>
Project: <b>BARNSELY TOWN CENTRE</b>			Chk'd: SM	App'd: SP	
		5th Floor, 2 City Walk LEEDS, LS11 9AR Tel: +44 (0) 113 391 6800 Fax: +44 (0) 113 391 6899 www.aecom.com	Date: 22/06/2015	Scale: 1:500	
			No. 60428357 - P - 002		
					<b>A3</b>



DRG Path: F:\PROJECTS\Development - BMBC Town Centre TA03 EXECUTION\CAD\Sheets\60428357 - P - 001 - Lambra Road\_Pontefract Road Signalised Junction.dwg  
Layout Tab: Layout1 • User: MANSONJ Plot time: 22/06/2015 @ 9:22 AM

Client:	<b>BARNSELY METROPOLITAN BOROUGH COUNCIL</b>
Project:	<b>BARNSELY TOWN CENTRE</b>

Title:	<b>LAMBRA ROAD / PONTEFRAC T ROAD SIGNALISED JUNCTION PROPOSED LAYOUT</b>
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5th Floor, 2 City Walk  
LEEDS, LS11 9AR

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www.aecom.com

Design:	JM	CAD:	JM	<b>CM</b>
Chk'd:	SM	App'd:	SP	
Date:	22/06/2015	Scale:	1:500	
No.	60428357 - P - 001		Rev:	

## Appendix B: Accident Data



Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss

Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types
					Ftl	Ser	SlT		L	M D			
B-00033-10	Slight	11/01/2010	1625	434697 406512	0	0	1	405V1B	0 0 0	Dark	Snowing without high winds	Frost/Ice	11 11
B-00054-10	Slight	17/01/2010	1600	434012 406287	0	0	1	405V1B	1 1 5	Light	Fine without high winds	Dry	9
B-00093-10	Slight	21/01/2010	1230	435152 405991	0	0	1	103V1A 408V1A	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
B-00127-10	Slight	01/02/2010	0810	434121 406239	0	0	1		1 3 6	Light	Fine without high winds	Dry	9
B-00169-10	Slight	06/02/2010	1745	434761 406074	0	0	5	501V2A 308V2B 408V1A 406V2B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
B-00247-10	Slight	20/02/2010	2101	434862 405894	0	0	5	301V2B 307V2B 601V2B 602V2B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
B-00264-10	Slight	26/02/2010	1555	434925 406693	0	0	1	806C1A 802C1A 808C1A	8 1 9	Light	Raining without high winds	Wet/Damp	9
B-00258-10	Slight	03/03/2010	0310	435511 405747	0	0	1	403V1A 509V1A	0 0 0	Dark	Fine without high winds	Dry	19
B-00290-10	Slight	09/03/2010	0915	434740 406065	0	0	1	405V2A 406V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00312-10	Slight	12/03/2010	1003	434958 406083	0	0	2	406V1B	0 0 0	Light	Fine without high winds	Wet/Damp	9 19 20
B-00348-10	Serious	22/03/2010	1627	434864 406481	0	1	1	308V1A 308V2A	0 0 0	Light	Raining without high winds	Wet/Damp	9 4
B-00356-10	Slight	22/03/2010	1720	434834 406239	0	0	2	405V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00375-10	Serious	02/04/2010	1537	434136 406377	0	1	0	802C1A 804C1A	1 1 3	Light	Raining without high winds	Wet/Damp	5
B-00408-10	Slight	13/04/2010	1230	434711 406076	0	0	5	405V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9 9 9 9
B-00498-10	Slight	26/04/2010	1637	435441 405774	0	0	1	701V1A 602V2B	0 0 0	Light	Fine without high winds	Dry	1 9
B-00457-10	Slight	28/04/2010	1430	434099 406246	0	0	2	402V2A 405V2A 408V2A	0 0 0	Light	Fine without high winds	Dry	9 19
B-00464-10	Slight	30/04/2010	1745	434054 406250	0	0	1	405V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00482-10	Slight	06/05/2010	0953	434752 406618	0	0	1	405V1A 103V2B 406V1B	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
B-00595-10	Slight	29/05/2010	2330	435390 406044	0	0	1	103V1A 408V1A 410V1A 306V1B	0 0 0	Dark	Raining without high winds	Wet/Damp	9
B-00585-10	Serious	31/05/2010	1602	434043 406337	0	1	0	406V1B 301V1B 803C1B	1 1 7	Light	Fine without high winds	Dry	11
B-00580-10	Slight	31/05/2010	0945	434849 406253	0	0	2	405V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00612-10	Slight	09/06/2010	1230	434861 405925	0	0	1	501V2A	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
B-00711-10	Slight	02/07/2010	1537	434809 405660	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	2 9
B-00779-10	Slight	22/07/2010	1320	434865 405908	0	0	1	509V2A 301V2A 103V2B	0 0 0	Light	Raining without high winds	Wet/Damp	9 9

Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss

Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types
					Ftl	Ser	Slt		L	M D			
B-00780-10	Slight	22/07/2010	1415	434826 406405	0	0	3	405V1A	0 0 0	Light	Raining without high winds	Wet/Damp	19 9
B-00916-10	Slight	28/08/2010	1720	435257 406063	0	0	1	703V1A 801C1B	1 9 1	Light	Fine without high winds	Dry	9
B-00944-10	Slight	11/09/2010	1245	434713 406123	0	0	1	405V2B	0 0 0	Light	Fine without high winds	Dry	9 11
B-00993-10	Slight	24/09/2010	0905	434850 406254	0	0	1	405V2A	0 0 0	Light	Fine with high winds	Dry	9 9
B-01054-10	Slight	03/10/2010	1528	435176 405707	0	0	1	802C1A 808C1A	1 9	Light	Fine without high winds	Dry	9
B-01088-10	Slight	15/10/2010	1400	434093 406242	0	0	1	406V2B	0 0 0	Light	Fine without high winds	Dry	2 9
B-01110-10	Slight	16/10/2010	2320	434126 406369	0	0	1		5 1 5	Dark	Fine without high winds	Dry	9
B-01122-10	Serious	23/10/2010	2233	435257 405838	0	1	1	802C1A	5 2 6	Dark	Fine without high winds	Dry	9
B-01130-10	Serious	25/10/2010	1330	434535 406030	0	1	0	802C1A 804C1A 808C1A	5 3 7	Light	Fine without high winds	Dry	9
B-01165-10	Slight	04/11/2010	2256	434539 406040	0	0	4	301V1B 301V2B	0 0 0	Dark	Raining with high winds	Wet/Damp	9 9
B-01192-10	Slight	08/11/2010	1533	434874 406346	0	0	1	405V1A 302V1B	0 0 0	Light	Raining without high winds	Wet/Damp	9 9
B-01275-10	Slight	28/11/2010	1100	434769 406197	0	0	1	103V1A 406V1B 410V1B	0 0 0	Light	Fine without high winds	Frost/Ice	9 9
B-01389-10	Slight	24/12/2010	1133	434759 406126	0	0	1	706V2A	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
B-00008-11	Slight	05/01/2011	1450	435018 405526	0	0	1	405V2A 406V2A	0 0 0	Light	Fine without high winds	Wet/Damp	2 9
B-00018-11	Slight	07/01/2011	1200	434101 406245	0	0	1	307V2B	0 0 0	Light	Snowing without high winds	Snow	9 9
B-00135-11	Slight	08/02/2011	0705	434066 406311	0	0	1	405V1A	0 0 0	Dark	Fine without high winds	Frost/Ice	1 9
B-00191-11	Slight	25/02/2011	1956	435040 405473	0	0	2	302V2A 405V2A 406V2B	0 0 0	Dark	Fine without high winds	Dry	9 8
B-00196-11	Slight	27/02/2011	0410	434630 406068	0	0	1	405V1A 806C1A	5 1	Dark	Fine without high winds	Dry	9
B-00227-11	Serious	08/03/2011	1018	434536 406053	0	1	0	803C1A	1 3 1	Light	Fine without high winds	Dry	9
B-00300-11	Slight	21/03/2011	1110	434926 405685	0	0	2	406V2B	0 0 0	Light	Fine without high winds	Dry	9 14
B-00292-11	Serious	23/03/2011	1113	434963 405690	0	1	0	405V1B 406V1B	1 1 3	Light	Fine without high winds	Dry	9
B-00317-11	Slight	03/04/2011	1230	434097 406244	0	0	1	402V2A 408V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00349-11	Slight	12/04/2011	1015	435026 405958	0	0	1	602V1A 601V1A 305V1A	9 5	Light	Fine without high winds	Dry	9
B-00369-11	Slight	12/04/2011	0950	435023 405959	0	0	2	406V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00403-11	Slight	03/05/2011	1715	434873 405897	0	0	2		0 0 0	Light	Fine without high winds	Dry	9 9
B-00461-11	Slight	16/05/2011	1225	434873 406377	0	0	1	406V1A 405V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00501-11	Serious	28/05/2011	1010	434534 406054	0	1	0	802C1A 808C1A 306V1B 307V1B	1 1 2	Light	Fine without high winds	Dry	9

Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss

Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types	
					Ftl	Ser	Slt		L	M D				Light
B-00539-11	Slight	16/06/2011	1240	434584 406116	0	0	1	405V1B	5	1 9	Light	Fine without high winds	Wet/Damp	8
B-00599-11	Slight	30/06/2011	1830	434830 406379	0	0	1	302V2A	0	0 0	Light	Fine without high winds	Dry	9 9
B-00661-11	Serious	14/07/2011	1710	435029 405954	0	1	0	802C1B	5	1 2	Light	Fine without high winds	Dry	9
B-00742-11	Slight	05/08/2011	1450	434755 406513	0	0	5	408V1A	0	0 0	Light	Fine without high winds	Dry	11
B-00754-11	Slight	09/08/2011	1456	434876 406360	0	0	1	302V1A	0	0 0	Light	Fine without high winds	Dry	11 19
B-00778-11	Slight	16/08/2011	1615	434429 405623	0	0	1	405V2A	0	0 0	Light	Fine without high winds	Dry	1 9
B-00808-11	Slight	24/08/2011	0630	434667 405617	0	0	1	405V2A	0	0 0	Light	Fine without high winds	Dry	1 9
B-01011-11	Slight	31/08/2011	1500	434841 406249	0	0	1	406V2A 403V2A	0	0 0	Light	Fine without high winds	Wet/Damp	9 3
B-00882-11	Slight	17/09/2011	1700	435146 405992	0	0	1		5	9 1	Light	Fine without high winds	Dry	9
B-00918-11	Slight	24/09/2011	1010	434313 406151	0	0	1	403V1A	0	0 0	Light	Fine without high winds	Dry	9 9
B-00968-11	Slight	08/10/2011	1755	435210 405710	0	0	1	103V1A 406V1A	0	0 0	Light	Fine without high winds	Wet/Damp	9 8
B-00972-11	Slight	10/10/2011	1500	435301 405821	0	0	1	405V1A	0	0 0	Light	Fine without high winds	Wet/Damp	3 9
B-01006-11	Slight	19/10/2011	0950	434920 406197	0	0	3	402V2A 405V2A 406V2B 706V2B	0	0 0	Light	Fine without high winds	Dry	9 9
B-01099-11	Slight	27/10/2011	1435	435516 405750	0	0	1	410V1A 306V1B	0	0 0	Light	Fine without high winds	Wet/Damp	9
B-01038-11	Slight	31/10/2011	1200	434457 406083	0	0	1	601V3A 901V3A	0	0 0	Light	Fine without high winds	Dry	9 9 9
B-01087-11	Slight	12/11/2011	1045	434829 406355	0	0	1	103V1B	0	0 0	Light	Fine without high winds	Wet/Damp	11 4
B-01105-11	Slight	14/11/2011	1940	433989 406286	0	0	1	405V1A 406V1A 308V1A	0	0 0	Dark	Other	Wet/Damp	9 1
B-01189-11	Slight	08/12/2011	1603	434905 405680	0	0	1	801C1A 802C1A 707C1A	5	2 3	Dark	Raining with high winds	Wet/Damp	9
B-01195-11	Slight	09/12/2011	1106	435006 406100	0	0	1	706V1A 103V1B	0	0 0	Light	Other	Wet/Damp	9 9
B-01199-11	Slight	12/12/2011	1625	435057 405436	0	0	1	103V1A 507V2A	0	0 0	Dark	Raining with high winds	Wet/Damp	3 9
B-01218-11	Slight	17/12/2011	1714	434876 406346	0	0	3	302V1A 405V1A	0	0 0	Dark	Raining without high winds	Wet/Damp	9 9
B-01275-11	Serious	22/12/2011	1145	434099 406333	0	1	0	999C1B		9 5	Light	Fine without high winds	Dry	9
B-01272-11	Slight	29/12/2011	1718	434981 406097	0	0	1	802C1A 807C1B	5	3 9	Dark	Raining without high winds	Wet/Damp	9
B-00049-12	Slight	16/01/2012	1550	434072 406309	0	0	1	402V1B 405V1B 405V2B	0	0 0	Light	Fine without high winds	Dry	9 2
B-00060-12	Slight	20/01/2012	0950	434516 405543	0	0	1	803C1B 405V1B	5	9 2	Light	Raining without high winds	Wet/Damp	9
B-00063-12	Serious	24/01/2012	0845	434922 405689	0	1	0	802C1A	4	4 2	Light	Raining without high winds	Wet/Damp	9
B-00112-12	Slight	05/02/2012	1355	434851 405889	0	0	1	501V1A 802C1B	4	1 1	Light	Fine without high winds	Wet/Damp	9

Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss

Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types
					Ftl	Ser	Slt		L	M D			
B-00154-12	Slight	11/02/2012	1320	434714 406736	0	0	2	405V1B 405V2B 403V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00172-12	Serious	25/02/2012	1318	435070 405931	0	1	0	802C1A	4 3 2	Light	Fine without high winds	Dry	9
B-00764-12	Slight	27/02/2012	1400	434975 405978	0	0	1	405V1B	1 9 9	Light	Fine without high winds	Dry	9
B-00202-12	Slight	01/03/2012	1545	434057 406310	0	0	1	409V1A	0 0 0	Light	Fine without high winds	Dry	9 9 9
B-00241-12	Slight	19/03/2012	1550	434861 405932	0	0	1	806C1A 807C1A 808C1A 802C1B 803C1A	5 1 7	Light	Fine without high winds	Dry	9
B-00295-12	Slight	05/04/2012	1012	434749 406065	0	0	2	308V2A 402V2A 405V2A	0 0 0	Light	Fine without high winds	Dry	9 9 9
B-00306-12	Slight	12/04/2012	0730	434690 405626	0	0	1	405V2A 602V2A	0 0 0	Light	Fine without high winds	Dry	9 9 9
B-00360-12	Slight	18/04/2012	1420	434732 406719	0	0	1	406V2A	0 0 0	Light	Raining without high winds	Wet/Damp	8 9
B-00355-12	Slight	21/04/2012	2145	434878 406345	0	0	4	408V1A	0 0 0	Dark	Fine without high winds	Dry	11
B-00390-12	Slight	22/04/2012	0122	434680 406093	0	0	1	501V1A	0 0 0	Dark	Fine without high winds	Dry	9
B-00364-12	Slight	23/04/2012	1415	435120 405901	0	0	1	409V1A	0 0 0	Light	Fine without high winds	Dry	9 1
B-00376-12	Serious	24/04/2012	1243	435052 406089	0	1	1	403V2A 405V2B 404V1B	0 0 0	Light	Fine without high winds	Dry	5 9
B-00405-12	Slight	07/05/2012	0414	434401 406168	0	0	1	803C1A 406V1A	5 1 5	Dark	Fine without high winds	Dry	9
B-00432-12	Serious	15/05/2012	1840	434558 406037	0	1	0	802C1A 803C1A 806C1A	1 1 9	Light	Fine without high winds	Dry	9
B-00442-12	Slight	17/05/2012	1500	434875 406346	0	0	1	401V2A	0 0 0	Light	Fine without high winds	Dry	9 5
B-00488-12	Slight	28/05/2012	1435	434794 406034	0	0	1	408V1A	0 0 0	Light	Fine without high winds	Dry	11
B-00539-12	Slight	11/06/2012	1200	434739 406069	0	0	2	402V2A 410V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00659-12	Slight	20/07/2012	1600	434666 405618	0	0	1	602V2A 405V2A 406V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00667-12	Slight	22/07/2012	1600	434535 406048	0	0	1	405V2A	0 0 0	Light	Fine without high winds	Dry	3 9
B-00687-12	Serious	30/07/2012	2000	434871 405906	0	1	0	301V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00704-12	Slight	05/08/2012	1750	434732 406125	0	0	1	509V1A 307V1A 405V1A	0 0 0	Light	Raining without high winds	Wet/Damp	9 9
B-00743-12	Slight	20/08/2012	1100	435289 406040	0	0	1	405V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00748-12	Slight	22/08/2012	1145	434725 406789	0	0	1		0 0 0	Light	Unknown	Dry	1 9
B-00780-12	Slight	28/08/2012	1905	434761 406084	0	0	1		0 0 0	Light	Fine without high winds	Dry	9 9

Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss

Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types
					Ftl	Ser	Slt		L	M D			
B-00838-12	Slight	12/09/2012	0001	434717 406736	0	0	1	405V2A 308V2A 406V2A	0 0 0	Light	Fine without high winds	Dry	14 2
B-00884-12	Serious	25/09/2012	2028	434609 405590	0	1	0	802C1A 806C1B 809C1A	5 9 9	Dark	Raining without high winds	Wet/Damp	9
B-00899-12	Serious	30/09/2012	0125	434634 406076	0	1	0	405V1A	5 1 3	Dark	Fine without high winds	Dry	9
B-00920-12	Slight	11/10/2012	0910	434754 406058	0	0	1		0 0 0	Light	Fine without high winds	Dry	1 9
B-00995-12	Slight	02/11/2012	1315	434299 406152	0	0	1		0 0 0	Light	Fine without high winds	Dry	9 9
B-01067-12	Slight	23/11/2012	0615	434540 406041	0	0	2	602V2A 301V2A	0 0 0	Dark	Fine without high winds	Dry	9 9
B-01120-12	Slight	04/12/2012	1840	434929 405758	0	0	1	802C1A 803C1B 806C1B 808C1A	5 1 9	Dark	Raining without high winds	Wet/Damp	9
B-01134-12	Slight	08/12/2012	1825	434584 406119	0	0	1	802C1A 809C1B	5 1 9	Dark	Fine without high winds	Dry	9
132587	Slight	14/01/2013	1047	434877 406341	0	0	1	401V2A	0 0 0	Light	Fine with high winds	Dry	11 9
132627	Slight	18/01/2013	1645	434030 406290	0	0	1	308V2B 307V2B 103V1A 103V2A	0 0 0	Dark	Snowing without high winds	Snow	9 9
132816	Slight	26/01/2013	1630	435510 405751	0	0	1	405V1B 802C1B	5 1 9	Dark	Fine without high winds	Dry	9
132934	Slight	05/02/2013	0735	434269 406171	0	0	1	103V2A 602V2B	0 0 0	Light	Fine without high winds	Dry	9 19
134252	Serious	23/02/2013	1125	435443 405774	0	1	0		0 0 0	Dark	Fine without high winds	Dry	11
B-00071-13	Slight	22/03/2013	0830	434663 406088	0	0	1	103V3A 405V3B	0 0 0	Light	Snowing without high winds	Snow	8 9 9
B-00154-13	Slight	21/04/2013	1440	434641 406534	0	0	1	805C1A 803C1A	4 3 9	Light	Fine without high winds	Dry	9
B-00152-13	Slight	23/04/2013	1800	435505 405751	0	0	1	803C1A 406V1B	7 5	Light	Fine without high winds	Dry	9
B-00174-13	Slight	30/04/2013	1705	435443 405775	0	0	1	405V1B	0 0 0	Light	Fine without high winds	Dry	9 1
B-00394-13	Slight	04/05/2013	1420	434740 406131	0	0	2	406V1A 405V1B	0 0 0	Light	Fine without high winds	Dry	11 9
B-00270-13	Slight	01/06/2013	0940	434711 406124	0	0	1	308V1B 408V1A	0 0 0	Light	Fine without high winds	Dry	11
B-00281-13	Slight	04/06/2013	1115	434756 406114	0	0	1	605V2B	0 0 0	Light	Fine without high winds	Dry	9 11
B-00318-13	Slight	05/06/2013	1415	434900 406320	0	0	6	405V1A 605V1A	0 0 0	Light	Fine without high winds	Dry	9 11
B-00319-13	Slight	15/06/2013	1509	434160 406387	0	0	1		0 0 0	Light	Fine without high winds	Dry	11
B-00329-13	Slight	16/06/2013	1734	435175 405711	0	0	1	308V1B 605V1B	0 0 0	Light	Fine without high winds	Dry	9 3
B-00408-13	Slight	28/06/2013	1427	434379 406123	0	0	1	109V1A 109V2A 808V1A 808V2A 805V1A 805V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00363-13	Serious	02/07/2013	1733	435496 405752	0	1	0	802C1A	5 1 3	Light	Raining without high winds	Wet/Damp	9
B-00379-13	Slight	07/07/2013	1600	435350 406028	0	0	7	204V1B	0 0 0	Light	Fine without high winds	Dry	9

Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss

Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types
					Ftl	Ser	SlT		L	M D			
B-00701-13	Slight	11/07/2013	2013	434860 406047	0	0	1	405V1A 405C1A	5 3 9	Light	Fine without high winds	Dry	9
B-00406-13	Slight	16/07/2013	1340	434109 406347	0	0	1	802C1A 808C1A	1 1 3	Light	Fine without high winds	Dry	11
B-00488-13	Slight	17/08/2013	2350	434300 406224	0	0	1	406V1B 805C1B	9 5 5	Dark	Fine without high winds	Dry	9
B-00507-13	Slight	27/08/2013	1815	435259 406043	0	0	1	406V1A 408V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00542-13	Slight	13/09/2013	1205	434062 406313	0	0	4	405V1B 406V1B 601V1A 602V1B	0 0 0	Light	Fine without high winds	Dry	11
B-00566-13	Slight	20/09/2013	1725	434131 406366	0	0	1	806C1A 406V1A	5 3 4	Light	Unknown	Dry	9
B-00584-13	Slight	29/09/2013	0845	434540 406040	0	0	6	301V1A 509V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00580-13	Slight	30/09/2013	1159	434776 406198	0	0	1	405V1A 602V1A 406V1A 306V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00651-13	Slight	18/10/2013	0620	434744 406067	0	0	1	901V2A 902V2A 501V2A	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
B-00638-13	Slight	21/10/2013	2110	434732 406721	0	0	1	103V1A 102V1A	0 0 0	Dark	Fine without high winds	Wet/Damp	9 11
B-00677-13	Serious	30/10/2013	1400	435628 405735	0	1	0	505V1A	0 0 0	Light	Fine without high winds	Dry	9
B-00722-13	Slight	02/11/2013	1250	434868 406541	0	0	1	405V1A 510V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00706-13	Slight	04/11/2013	1623	434982 405632	0	0	1	406V2A 404V1B	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
B-00713-13	Slight	06/11/2013	1240	434776 406198	0	0	1	405V2A 403V2A 404V1B	0 0 0	Light	Fine without high winds	Wet/Damp	9 9
B-00748-13	Serious	13/11/2013	0714	434536 406056	0	1	1	802C1A 804C1A	1 3 1	Light	Fine without high winds	Wet/Damp	9
B-00791-13	Slight	20/11/2013	1310	435169 405873	0	0	1	408V1A 308V2B	0 0 0	Light	Fine without high winds	Dry	9 2
B-00788-13	Slight	24/11/2013	0100	434464 406369	0	0	1	703V1B 809C1B	8 3 5	Dark	Fine without high winds	Dry	9
B-00817-13	Slight	28/11/2013	1415	434763 406428	0	0	1	808C1A	9 5 3	Light	Fine without high winds	Dry	11
B-00824-13	Slight	30/11/2013	1340	434096 406243	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00884-13	Serious	23/12/2013	1830	434808 405995	0	1	0	806C1B 802C1A 809C1A	8 1 3	Dark	Fine without high winds	Wet/Damp	11
B-00174-14	Slight	03/01/2014	1355	434874 406366	0	0	1	405V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-00148-14	Slight	14/01/2014	1550	434960 405863	0	0	1	607V1A 410V1A 405V1A 602V1A	0 0 0	Light	Fine without high winds	Dry	2 9
B-00058-14	Slight	21/01/2014	1715	434113 406244	0	0	1	408V1A 605V1A	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9

Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss

Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types
					Ftl	Ser	Slt		L	M D			
B-00205-14	Slight	04/02/2014	1605	434757 406620	0	0	2	405V1A 406V1A 405V2A 406V2A 605V2A	0 0 0	Light	Fine without high winds	Dry	2 9
B-00110-14	Slight	04/02/2014	1633	435443 405774	0	0	1	802C1A 803C1A 806C1A	5 3 9	Light	Fine without high winds	Dry	9
B-00121-14	Slight	04/02/2014	0815	434908 405786	0	0	1	808C1A 802C1A	5 8 1	Light	Fine without high winds	Dry	9
B-00188-14	Slight	06/02/2014	1950	434604 406524	0	0	1	407V1A	9 7 3	Dark	Raining without high winds	Wet/Damp	9
B-00162-14	Slight	17/02/2014	1320	434116 406257	0	0	1	406V2B 308V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00238-14	Slight	12/03/2014	1223	434997 405974	0	0	1	405V1B	6 9 4	Light	Fine without high winds	Dry	11
B-00260-14	Slight	18/03/2014	2310	435572 405746	0	0	2	901V2A	0 0 0	Dark	Fine without high winds	Dry	9 9
B-00264-14	Slight	18/03/2014	1615	434446 406074	0	0	1	802C1A 808C1A 803C1A	4 2 1	Light	Fine without high winds	Dry	9
B-00311-14	Slight	02/04/2014	1800	434726 406128	0	0	1	405V1B 406V1B 403V2A 308V2B 307V1B 710V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00308-14	Slight	04/04/2014	2145	434687 406097	0	0	1	802C1A 808C1A 806C1A 809C1A	4 3 1	Dark	Fine without high winds	Dry	9
B-00351-14	Slight	10/04/2014	1245	434097 406332	0	0	1	605V1B 405V1B	0 0 0	Light	Fine without high winds	Dry	2 9
B-00515-14	Slight	17/04/2014	1540	435486 405759	0	0	4	509V1A 602V1A 902V1A	0 0 0	Light	Unknown	Dry	9 9 9 9
B-00372-14	Slight	27/04/2014	0826	435198 406054	0	0	1	201V1B 410V1A 509V1A 902V1A 999V1A	0 0 0	Light	Fine without high winds	Dry	9
B-00574-14	Slight	17/06/2014	1100	434523 406054	0	0	1	405V1A 406V1A	0 0 0	Light	Fine without high winds	Dry	8 9
B-00572-14	Serious	20/06/2014	2004	435561 405739	0	1	0	308V2A 408V1A 406V1B 406V2B	0 0 0	Light	Fine without high winds	Dry	3 9
B-00643-14	Slight	14/07/2014	1145	434713 406071	0	0	1	308V3A 405V3A 406V3A	0 0 0	Light	Fine without high winds	Dry	9 9 9
B-00674-14	Slight	18/07/2014	1307	434006 406287	0	0	1	803C1A	1 3 1	Light	Fine without high winds	Dry	9
B-00682-14	Slight	24/07/2014	1218	434115 406242	0	0	1	308V2B 406V1B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00750-14	Slight	11/08/2014	1410	434110 406332	0	0	1	405V2B	0 0 0	Light	Fine without high winds	Dry	9 9
B-00752-14	Slight	11/08/2014	1155	435050 406090	0	0	1	706V2A 406V2A 404V1B	0 0 0	Light	Fine without high winds	Dry	9 9

Accidents between dates 01/01/2010 and 31/12/2014 (60) months

Selection: Notes:  
Selected using Build Query : Local\_auth = 'Barnsley' AECOM - Steve Moss


Police Ref.	Acc Class	Date	Time	Grid References	Casualties			Causation Factors/ Prob	Ped		Weather	Road Surface	Vehicle Types
					Ftl	Ser	Slt		L	M D			
B-00754-14	Slight	11/08/2014	1310	434902 405683	0	0	1	405V1A 710V1A	0 0 0	Light	Fine without high winds	Dry	22 21
B-00840-14	Slight	13/09/2014	2300	434144 406376	0	0	1	806C1A 810C1A	8 3 3	Dark	Fine without high winds	Dry	9
B-00845-14	Slight	15/09/2014	2001	434965 405680	0	0	1	308V1A 306V1B 405V1B 602V1B 710V1A 408V1A	0 0 0	Dark	Fine without high winds	Dry	9 9
B-00991-14	Serious	21/10/2014	1920	434891 406612	0	1	0		5 1 3	Dark	Fine without high winds	Dry	9
B-01109-14	Slight	22/10/2014	1715	435001 405567	0	0	1	505V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-01016-14	Slight	27/10/2014	1300	434571 406105	0	0	1	405V2B	5 7 9	Light	Fine without high winds	Dry	9
B-01187-14	Slight	14/11/2014	1312	434983 405634	0	0	1	510V1A	0 0 0	Light	Fine without high winds	Dry	9 9
B-01108-14	Slight	19/11/2014	1700	435176 406062	0	0	1	406V1A	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
B-01180-14	Slight	28/11/2014	1245	434075 406311	0	0	1	406V2B 602V2A	0 0 0	Light	Fine without high winds	Dry	9 9
B-01315-14	Slight	11/12/2014	1924	434447 406188	0	0	2	301V1B 301V2B	0 0 0	Dark	Fine without high winds	Wet/Damp	9 9
B-01231-14	Serious	12/12/2014	1346	434846 405960	0	1	0	405V1A 602V1A 802C1B 803C1B	5 1 6	Light	Fine without high winds	Wet/Damp	9
B-01273-14	Slight	22/12/2014	0740	434541 406041	0	0	1	301V1B 301V2B 406V2B 602V1B 602V2B	0 0 0	Dark	Fine with high winds	Dry	9 19
Column Totals					0	25	228						

Total number of accidents listed: 183

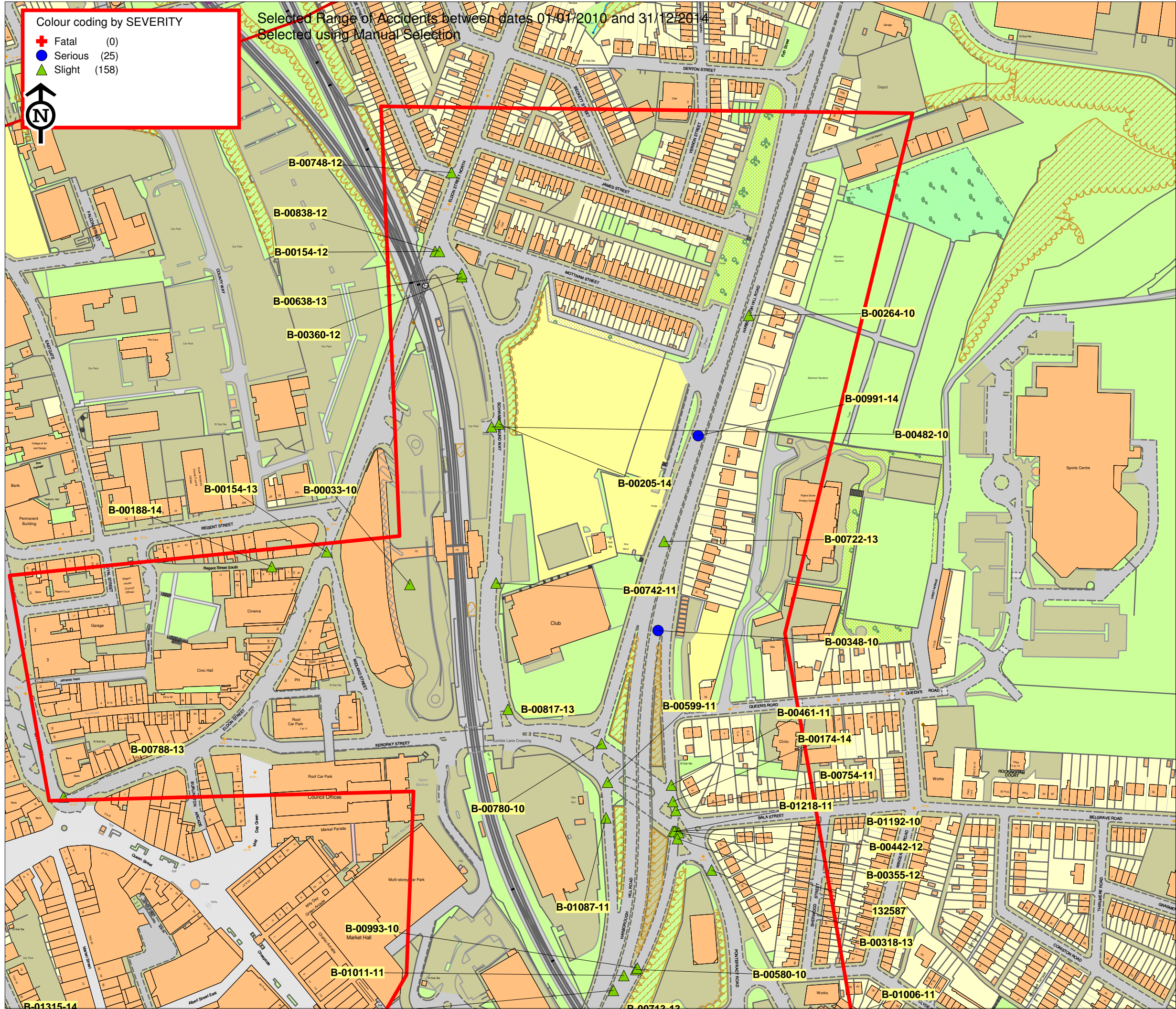


Colour coding by SEVERITY

- ✚ Fatal (0)
- Serious (25)
- ▲ Slight (158)



Selected Range of Accidents between dates 01/01/2010 and 31/12/2014  
 Selected using Manual Selection



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**MAKING SOUTH YORKSHIRE  
 ROADS SAFER**

DRAWING TITLE  
 Selected map area

SCALE 1 : 2430

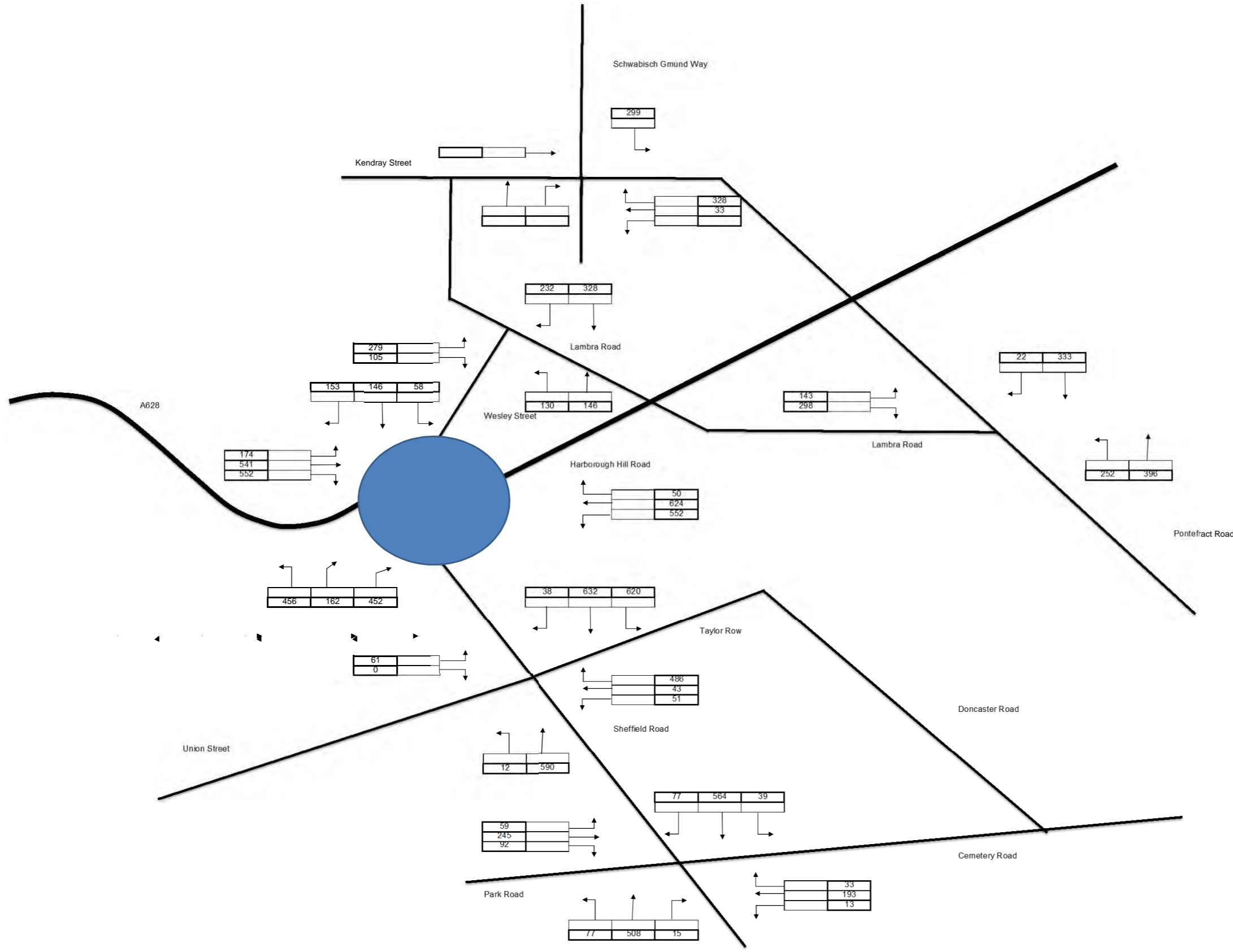
DATE 23/06/2015

DWG No.

DRAWN BY


## Appendix C: Traffic Flow Diagrams





Key  
 AM Peak   
 PM Peak

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

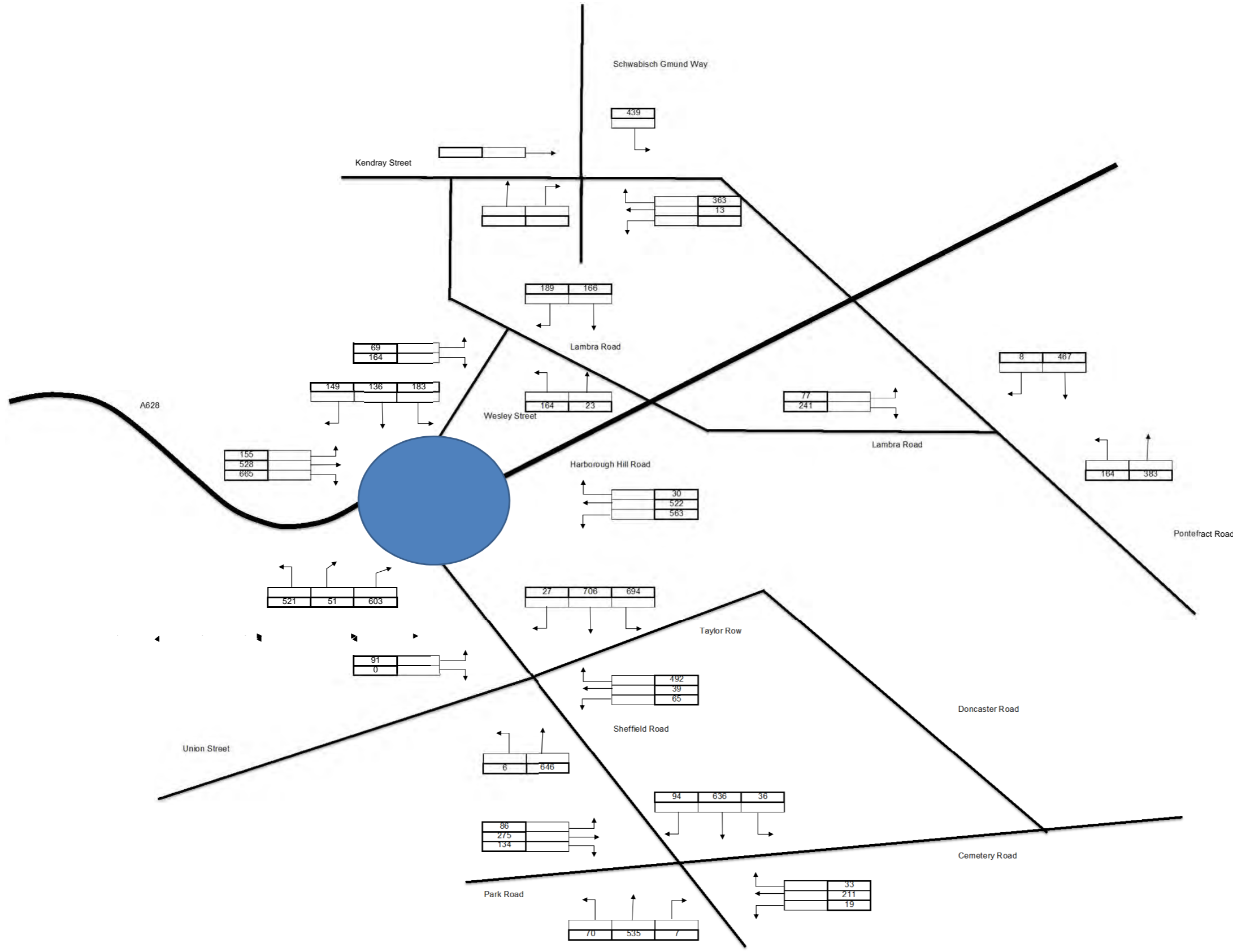
Title: **2015 BASE TRAFFIC FLOWS - SATURDAY PM**



Drawing Number: **FIGURE 11**

Revision: **-**

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx



**Key**  
 AM Peak   
 PM Peak

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

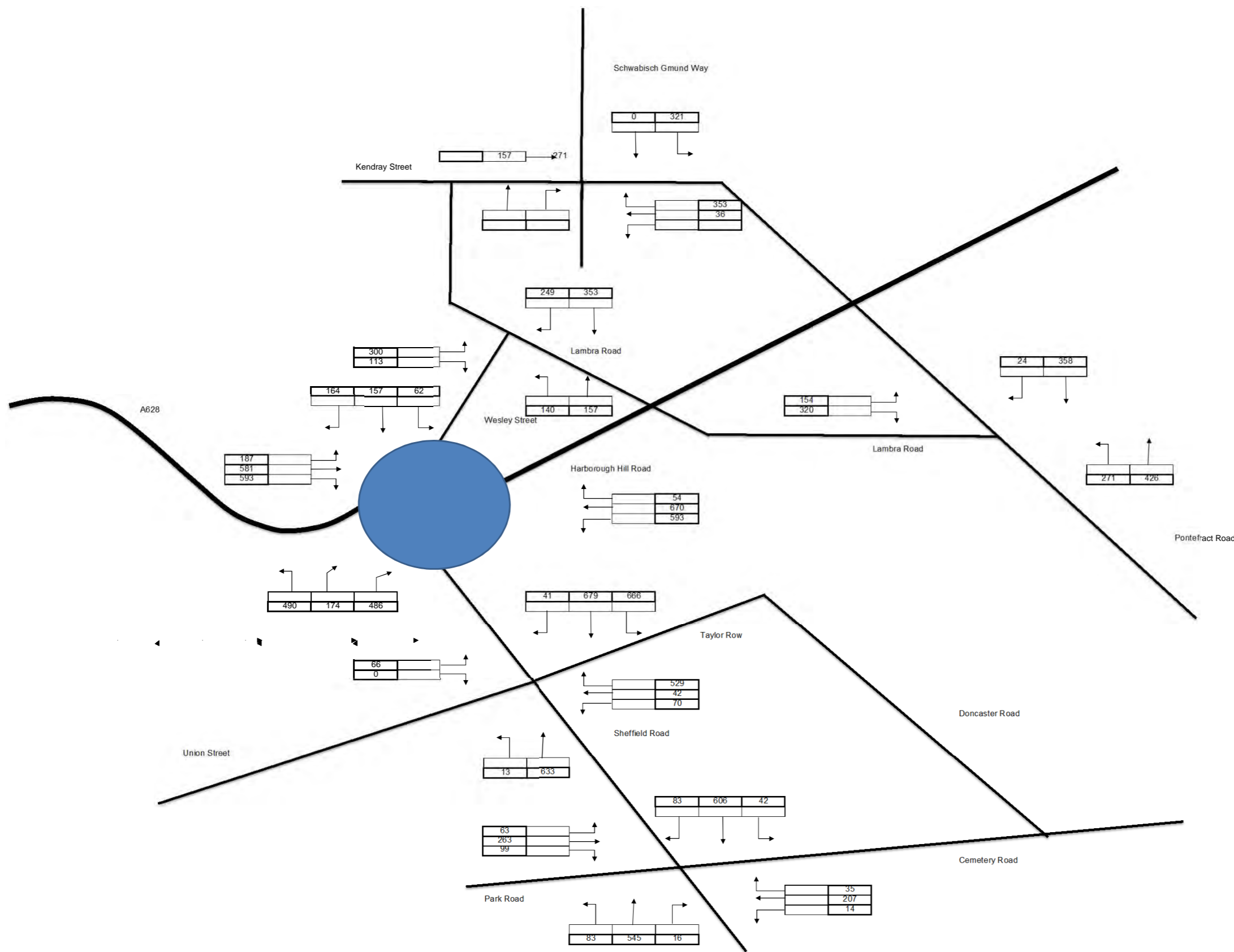
Title: **2015 BASE TRAFFIC FLOWS - FRIDAY PM**



Drawing Number: **FIGURE 11**

Revision: **-**

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx



Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

Title: **2020 BASE TRAFFIC FLOWS - SATURDAY**

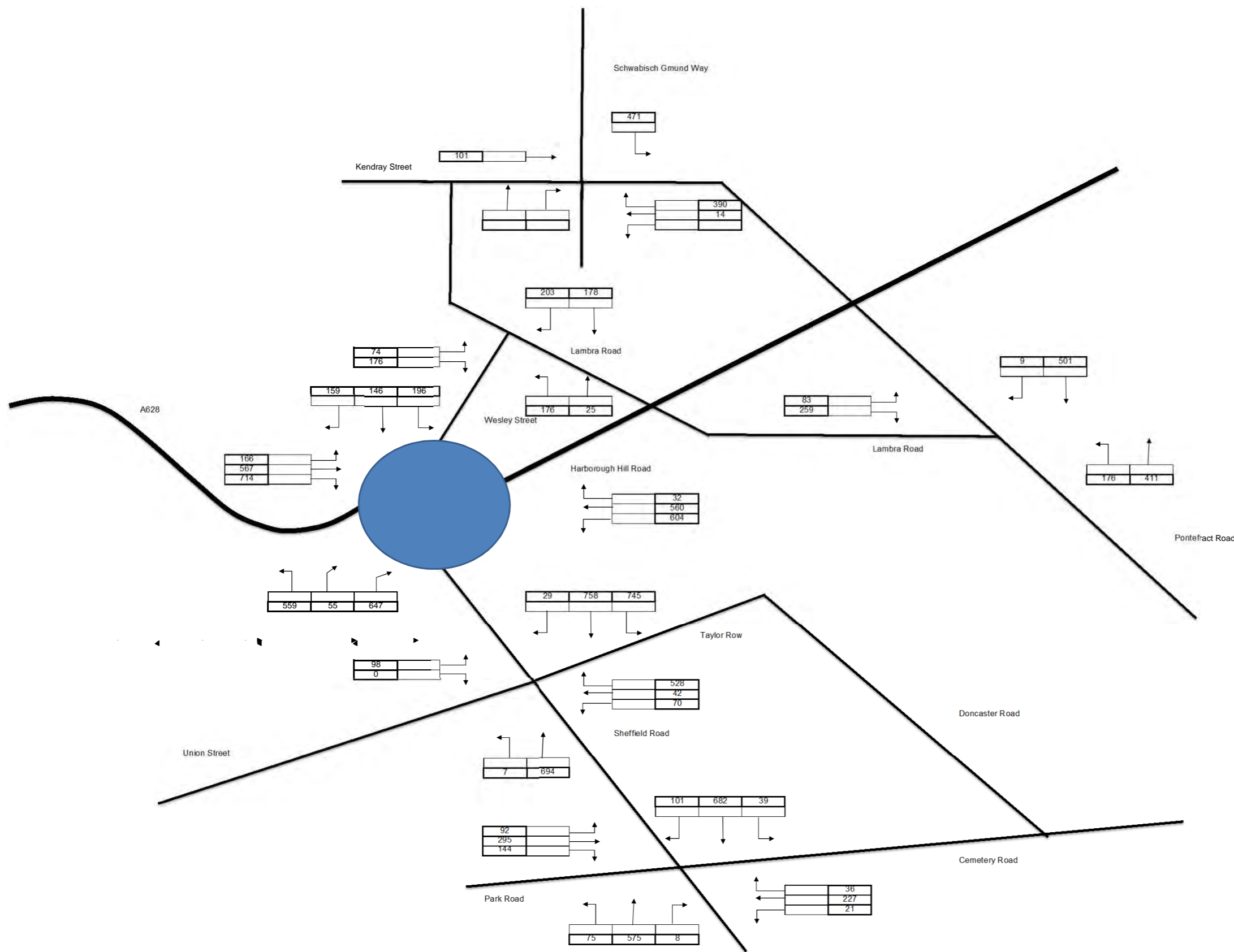


Drawing Number: **FIGURE 12**

Revision: **-**

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx



**Key**  
 AM Peak [Single Box]  
 PM Peak [Double Box]

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

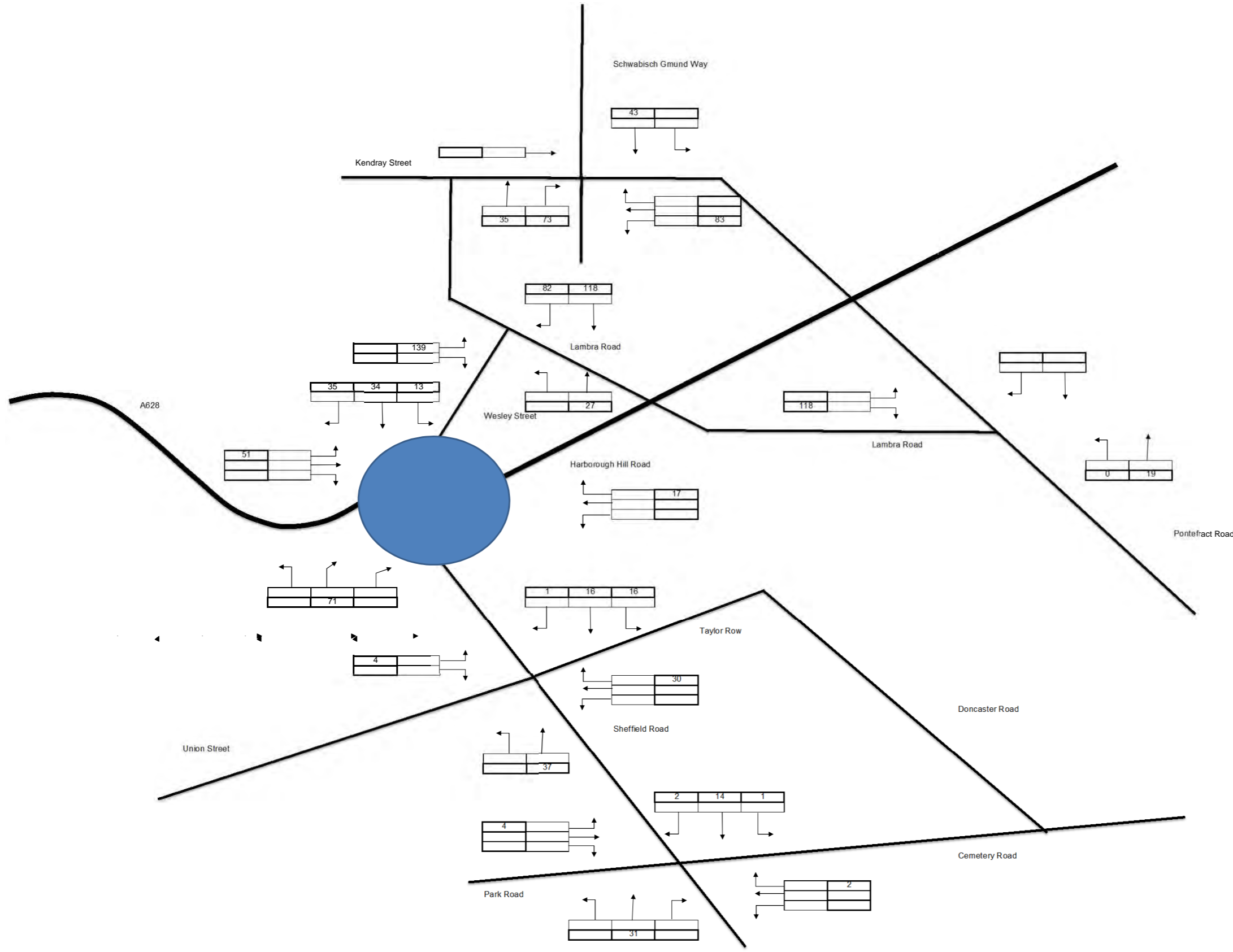
Title: **2020 BASE TRAFFIC FLOWS - FRIDAY PM**



Drawing Number: **FIGURE 12**

Revision: **-**

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx



**Key**  
 AM Peak [White Box]  
 PM Peak [Hatched Box]

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

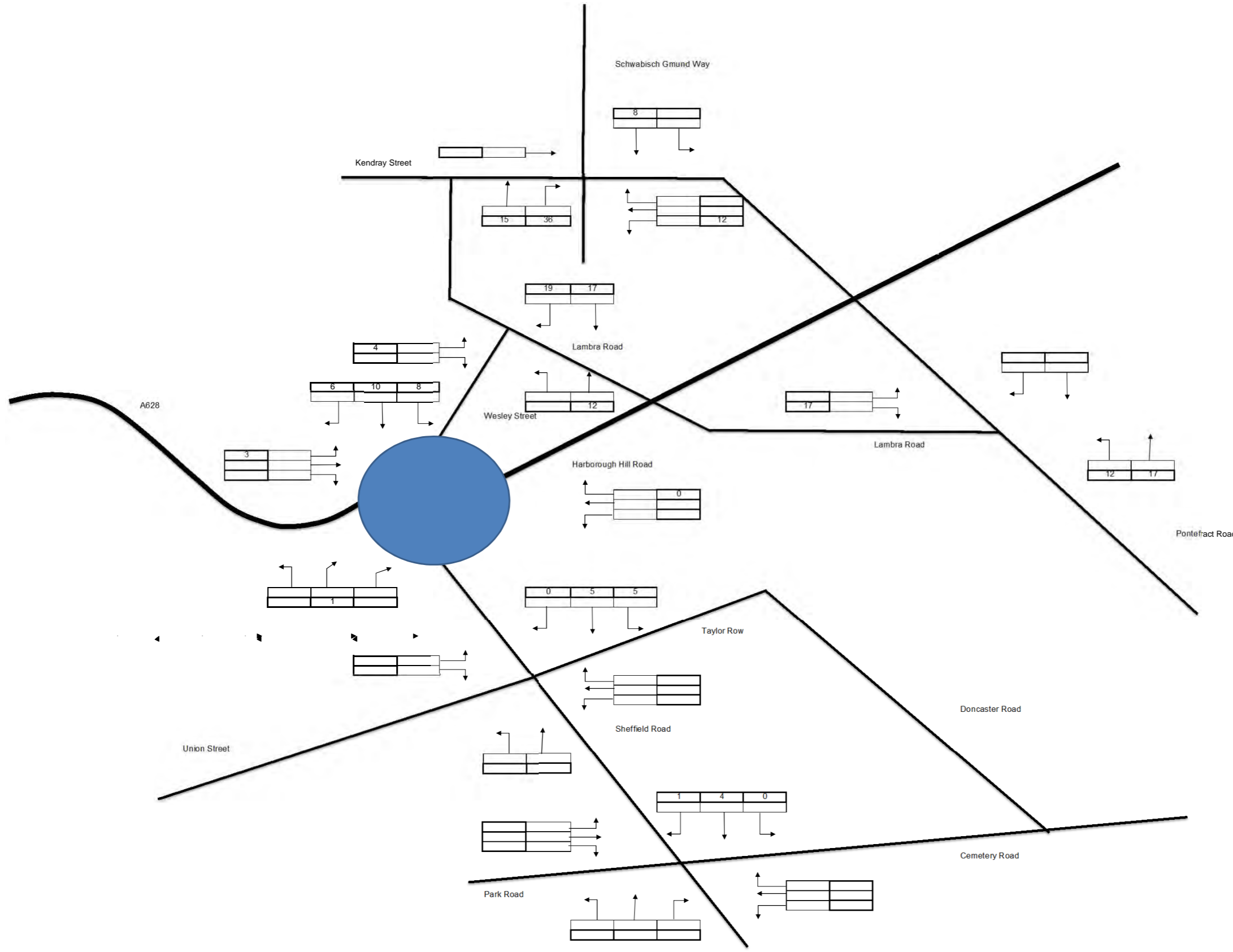
Title: **SATURDAY DEVELOPMENT TRAFFIC**



Drawing Number: **FIGURE 13**

Revision: **-**

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx



**Key**  
 AM Peak   
 PM Peak

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

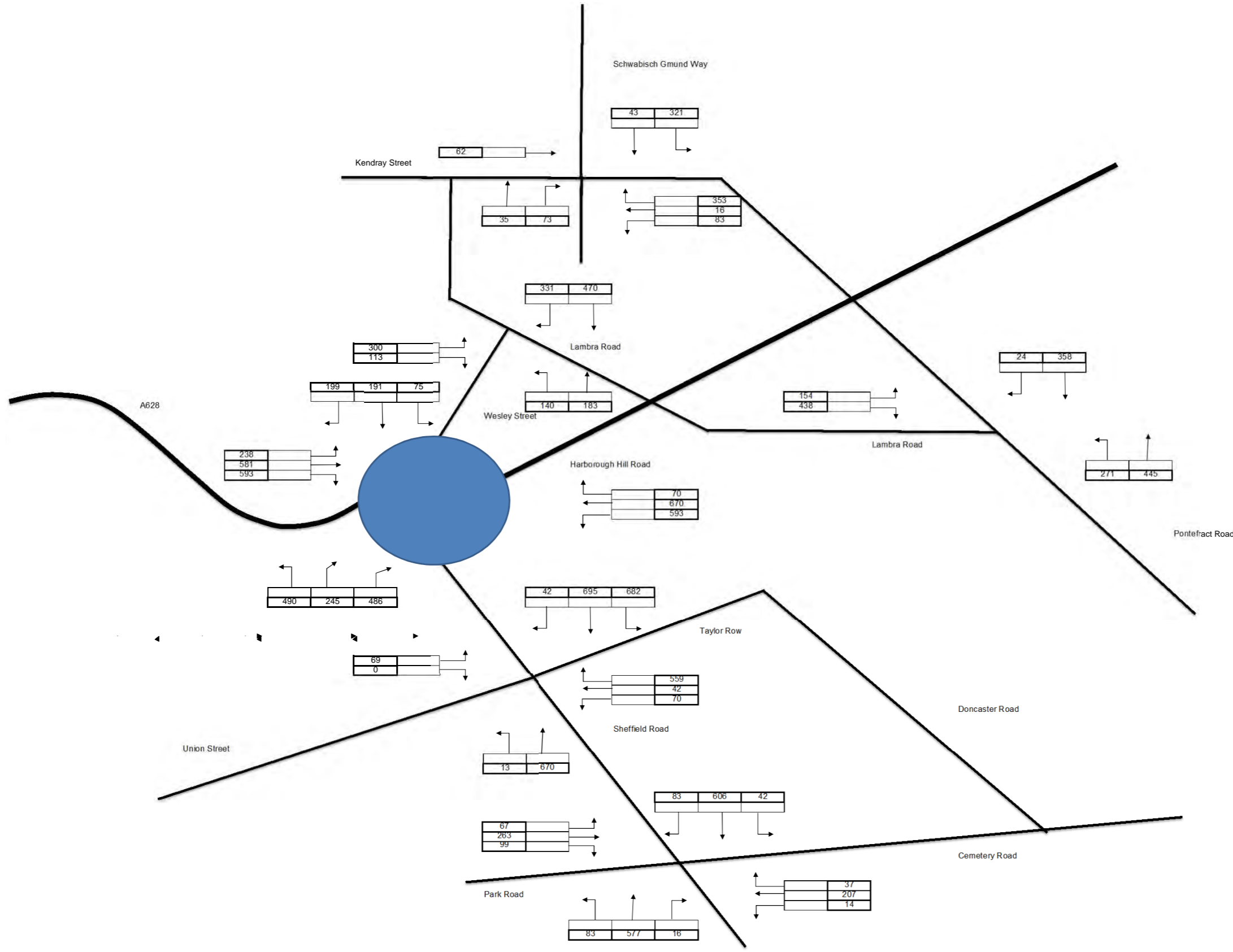
Title: **FRIDAY DEVELOPMENT TRAFFIC**





Drawing Number: **FIGURE 13**

Revision: **-**

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx



**Key**  
 AM Peak   
 PM Peak 

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

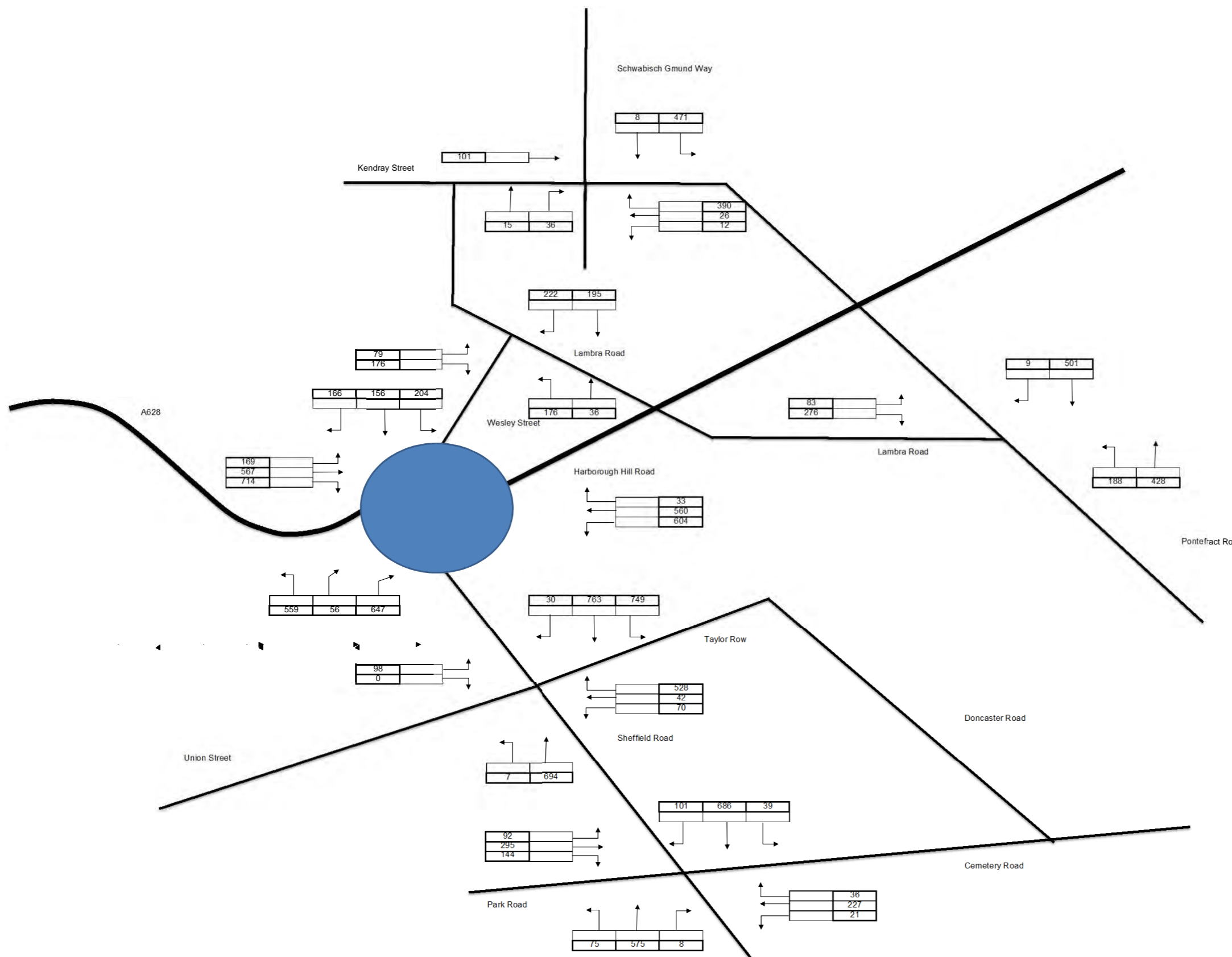
Title: **2020 BASE + DEV TRAFFIC FLOWS - SATURDAY**



Drawing Number: **FIGURE 14**

Revision: **-**

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx



**Key**  
 AM Peak   
 PM Peak

Date	15/06/2015
Design	JM
Checked	SM
Approved	SP

Client: **BMBC**

Project: **BARNSELY TOWN CENTRE**

Title: **2020 BASE + DEV TRAFFIC FLOWS - FRIDAY PM**



Drawing Number: **FIGURE 14**

Revision: **-**

File Path: F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Excel\BMBC Town Centre Traffic Flows.xlsx

## Appendix D: TRICS Outputs



## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE  
 Category : V - LIBRARY  
 VEHICLES

Selected regions and areas:

09	NORTH	
	TV	TEES VALLEY 1 days
10	WALES	
	CF	CARDIFF 1 days
11	SCOTLAND	
	FA	FALKIRK 1 days
15	GREATER DUBLIN	
	DL	DUBLIN 1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

## Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross Floor Area  
 Actual Range: 402 to 1607 (units: sqm)  
 Range Selected by User: 402 to 4575 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/06 to 03/10/13

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Thursday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	3
Retail Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

D1 4 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

10,001 to 15,000	1 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

100,001 to 125,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No 4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	CF-07-V-01	LIBRARY		CARDIFF
	CRICKHOWELL ROAD			
	ST MELLONS			
	CARDIFF			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross Floor Area:		402 sqm	
	Survey date: MONDAY		23/10/06	Survey Type: MANUAL
2	DL-07-V-01	LIBRARY		DUBLIN
	NAVAN ROAD			
	CABRA WEST			
	DUBLIN			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross Floor Area:		992 sqm	
	Survey date: THURSDAY		29/09/11	Survey Type: MANUAL
3	FA-07-V-01	LIBRARY		FALKIRK
	HOPE STREET			
	GRAHAMSTON			
	FALKIRK			
	Edge of Town Centre			
	Retail Zone			
	Total Gross Floor Area:		1607 sqm	
	Survey date: THURSDAY		30/05/13	Survey Type: MANUAL
4	TV-07-V-01	LIBRARY		TEES VALLEY
	ACKLAM ROAD			
	ACKLAM			
	MIDDLESBROUGH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross Floor Area:		500 sqm	
	Survey date: THURSDAY		03/10/13	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 07 - LEISURE/V - LIBRARY  
 VEHICLES  
 Calculation factor: 100 sqm  
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	402	0.000	1	402	0.000	1	402	0.000
08:00 - 09:00	1	402	1.493	1	402	0.498	1	402	1.991
09:00 - 10:00	4	875	1.057	4	875	0.600	4	875	1.657
10:00 - 11:00	4	875	1.371	4	875	0.800	4	875	2.171
11:00 - 12:00	4	875	1.428	4	875	1.628	4	875	3.056
12:00 - 13:00	4	875	0.914	4	875	1.057	4	875	1.971
13:00 - 14:00	4	875	1.114	4	875	0.971	4	875	2.085
14:00 - 15:00	4	875	1.028	4	875	1.171	4	875	2.199
15:00 - 16:00	4	875	1.285	4	875	0.943	4	875	2.228
16:00 - 17:00	4	875	1.371	4	875	1.571	4	875	2.942
17:00 - 18:00	4	875	0.828	4	875	1.314	4	875	2.142
18:00 - 19:00	4	875	0.600	4	875	0.885	4	875	1.485
19:00 - 20:00	2	1300	0.269	2	1300	0.269	2	1300	0.538
20:00 - 21:00	2	1300	0.000	2	1300	0.231	2	1300	0.231
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			12.758			11.938			24.696

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 402 - 1607 (units: sqm)  
 Survey date range: 01/01/06 - 03/10/13  
 Number of weekdays (Monday-Friday): 4  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/V - LIBRARY

TAXIS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	402	0.000	1	402	0.000	1	402	0.000
08:00 - 09:00	1	402	0.000	1	402	0.000	1	402	0.000
09:00 - 10:00	4	875	0.057	4	875	0.057	4	875	0.114
10:00 - 11:00	4	875	0.086	4	875	0.086	4	875	0.172
11:00 - 12:00	4	875	0.000	4	875	0.000	4	875	0.000
12:00 - 13:00	4	875	0.029	4	875	0.029	4	875	0.058
13:00 - 14:00	4	875	0.000	4	875	0.000	4	875	0.000
14:00 - 15:00	4	875	0.029	4	875	0.029	4	875	0.058
15:00 - 16:00	4	875	0.000	4	875	0.000	4	875	0.000
16:00 - 17:00	4	875	0.000	4	875	0.000	4	875	0.000
17:00 - 18:00	4	875	0.000	4	875	0.000	4	875	0.000
18:00 - 19:00	4	875	0.000	4	875	0.000	4	875	0.000
19:00 - 20:00	2	1300	0.000	2	1300	0.000	2	1300	0.000
20:00 - 21:00	2	1300	0.000	2	1300	0.000	2	1300	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.201			0.201			0.402

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 402 - 1607 (units: sqm)  
 Survey date date range: 01/01/06 - 03/10/13  
 Number of weekdays (Monday-Friday): 4  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/V - LIBRARY

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	402	0.000	1	402	0.000	1	402	0.000
08:00 - 09:00	1	402	0.000	1	402	0.000	1	402	0.000
09:00 - 10:00	4	875	0.000	4	875	0.000	4	875	0.000
10:00 - 11:00	4	875	0.000	4	875	0.000	4	875	0.000
11:00 - 12:00	4	875	0.000	4	875	0.000	4	875	0.000
12:00 - 13:00	4	875	0.000	4	875	0.000	4	875	0.000
13:00 - 14:00	4	875	0.000	4	875	0.000	4	875	0.000
14:00 - 15:00	4	875	0.000	4	875	0.000	4	875	0.000
15:00 - 16:00	4	875	0.000	4	875	0.000	4	875	0.000
16:00 - 17:00	4	875	0.000	4	875	0.000	4	875	0.000
17:00 - 18:00	4	875	0.000	4	875	0.000	4	875	0.000
18:00 - 19:00	4	875	0.000	4	875	0.000	4	875	0.000
19:00 - 20:00	2	1300	0.000	2	1300	0.000	2	1300	0.000
20:00 - 21:00	2	1300	0.000	2	1300	0.000	2	1300	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 402 - 1607 (units: sqm)  
 Survey date date range: 01/01/06 - 03/10/13  
 Number of weekdays (Monday-Friday): 4  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/V - LIBRARY

PSVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	402	0.000	1	402	0.000	1	402	0.000
08:00 - 09:00	1	402	0.000	1	402	0.000	1	402	0.000
09:00 - 10:00	4	875	0.000	4	875	0.000	4	875	0.000
10:00 - 11:00	4	875	0.000	4	875	0.000	4	875	0.000
11:00 - 12:00	4	875	0.000	4	875	0.000	4	875	0.000
12:00 - 13:00	4	875	0.000	4	875	0.000	4	875	0.000
13:00 - 14:00	4	875	0.000	4	875	0.000	4	875	0.000
14:00 - 15:00	4	875	0.000	4	875	0.000	4	875	0.000
15:00 - 16:00	4	875	0.000	4	875	0.000	4	875	0.000
16:00 - 17:00	4	875	0.000	4	875	0.000	4	875	0.000
17:00 - 18:00	4	875	0.000	4	875	0.000	4	875	0.000
18:00 - 19:00	4	875	0.000	4	875	0.000	4	875	0.000
19:00 - 20:00	2	1300	0.000	2	1300	0.000	2	1300	0.000
20:00 - 21:00	2	1300	0.000	2	1300	0.000	2	1300	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 402 - 1607 (units: sqm)  
 Survey date date range: 01/01/06 - 03/10/13  
 Number of weekdays (Monday-Friday): 4  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/V - LIBRARY

CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	402	0.000	1	402	0.000	1	402	0.000
08:00 - 09:00	1	402	0.000	1	402	0.000	1	402	0.000
09:00 - 10:00	4	875	0.029	4	875	0.000	4	875	0.029
10:00 - 11:00	4	875	0.057	4	875	0.000	4	875	0.057
11:00 - 12:00	4	875	0.057	4	875	0.029	4	875	0.086
12:00 - 13:00	4	875	0.057	4	875	0.057	4	875	0.114
13:00 - 14:00	4	875	0.057	4	875	0.114	4	875	0.171
14:00 - 15:00	4	875	0.057	4	875	0.086	4	875	0.143
15:00 - 16:00	4	875	0.143	4	875	0.057	4	875	0.200
16:00 - 17:00	4	875	0.114	4	875	0.143	4	875	0.257
17:00 - 18:00	4	875	0.057	4	875	0.143	4	875	0.200
18:00 - 19:00	4	875	0.086	4	875	0.000	4	875	0.086
19:00 - 20:00	2	1300	0.000	2	1300	0.115	2	1300	0.115
20:00 - 21:00	2	1300	0.000	2	1300	0.000	2	1300	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.714			0.744			1.458

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 402 - 1607 (units: sqm)  
 Survey date date range: 01/01/06 - 03/10/13  
 Number of weekdays (Monday-Friday): 4  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE  
 Category : A - MULTIPLEX CINEMAS  
 VEHICLES

Selected regions and areas:

01	GREATER LONDON	
	CN CAMDEN	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
11	SCOTLAND	
	FA FALKIRK	1 days
14	LEINSTER	
	WT WESTMEATH	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

## Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area  
 Actual Range: 464 to 4500 (units: sqm)  
 Range Selected by User: 464 to 7828 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 03/12/09

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Friday 5 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 5 days  
 Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	3
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Retail Zone	2
Built-Up Zone	3

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

D2 5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

5,001 to 10,000	2 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	1 days
1.1 to 1.5	2 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No 5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	CN-07-A-01	ODEON			CAMDEN
		TOTTENHAM COURT RD			
		BLOOMSBURY			
		Town Centre			
		Built-Up Zone			
		Total Gross floor area:	464 sqm		
		Survey date: FRIDAY	23/10/09		Survey Type: MANUAL
2	FA-07-A-01	CINEWORLD			FALKIRK
		STIRLING ROAD			
		FALKIRK			
		Edge of Town Centre			
		Built-Up Zone			
		Total Gross floor area:	4100 sqm		
		Survey date: FRIDAY	27/04/07		Survey Type: MANUAL
3	NY-07-A-02	VUE			NORTH YORKSHIRE
		STIRLING ROAD			
		CLIFTON MOOR			
		YORK			
		Edge of Town			
		Retail Zone			
		Total Gross floor area:	4500 sqm		
		Survey date: FRIDAY	18/09/09		Survey Type: MANUAL
4	SH-07-A-02	CINEWORLD			SHROPSHIRE
		OLD POTTS WAY			
		SHREWSBURY			
		Edge of Town Centre			
		Built-Up Zone			
		Total Gross floor area:	2400 sqm		
		Survey date: FRIDAY	19/06/09		Survey Type: MANUAL
5	WT-07-A-01	IMC			WESTMEATH
		JOHN BRODERICK STREET			
		ATHLONE			
		Edge of Town Centre			
		Retail Zone			
		Total Gross floor area:	2200 sqm		
		Survey date: FRIDAY	22/06/07		Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS  
VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	4	3300	0.068	4	3300	0.417	4	3300	0.485
01:00 - 02:00	3	3033	0.000	3	3033	0.527	3	3033	0.527
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	2400	0.000	1	2400	0.000	1	2400	0.000
11:00 - 12:00	2	3250	0.015	2	3250	0.015	2	3250	0.030
12:00 - 13:00	5	2733	0.351	5	2733	0.095	5	2733	0.446
13:00 - 14:00	5	2733	0.717	5	2733	0.366	5	2733	1.083
14:00 - 15:00	5	2733	0.688	5	2733	0.278	5	2733	0.966
15:00 - 16:00	5	2733	0.783	5	2733	0.820	5	2733	1.603
16:00 - 17:00	5	2733	1.025	5	2733	0.827	5	2733	1.852
17:00 - 18:00	5	2733	1.295	5	2733	0.944	5	2733	2.239
18:00 - 19:00	5	2733	2.218	5	2733	1.156	5	2733	3.374
19:00 - 20:00	5	2733	2.862	5	2733	1.515	5	2733	4.377
20:00 - 21:00	5	2733	2.810	5	2733	2.430	5	2733	5.240
21:00 - 22:00	5	2733	2.722	5	2733	1.976	5	2733	4.698
22:00 - 23:00	5	2733	0.725	5	2733	2.898	5	2733	3.623
23:00 - 24:00	5	2733	0.198	5	2733	2.379	5	2733	2.577
<b>Total Rates:</b>			16.477			16.643			33.120

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 464 - 4500 (units: sqm)  
 Survey date range: 01/01/05 - 03/12/09  
 Number of weekdays (Monday-Friday): 5  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

TAXIS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	4	3300	0.061	4	3300	0.061	4	3300	0.122
01:00 - 02:00	3	3033	0.000	3	3033	0.000	3	3033	0.000
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	2400	0.000	1	2400	0.000	1	2400	0.000
11:00 - 12:00	2	3250	0.000	2	3250	0.000	2	3250	0.000
12:00 - 13:00	5	2733	0.007	5	2733	0.000	5	2733	0.007
13:00 - 14:00	5	2733	0.007	5	2733	0.015	5	2733	0.022
14:00 - 15:00	5	2733	0.022	5	2733	0.015	5	2733	0.037
15:00 - 16:00	5	2733	0.015	5	2733	0.022	5	2733	0.037
16:00 - 17:00	5	2733	0.022	5	2733	0.022	5	2733	0.044
17:00 - 18:00	5	2733	0.029	5	2733	0.022	5	2733	0.051
18:00 - 19:00	5	2733	0.073	5	2733	0.081	5	2733	0.154
19:00 - 20:00	5	2733	0.051	5	2733	0.044	5	2733	0.095
20:00 - 21:00	5	2733	0.132	5	2733	0.132	5	2733	0.264
21:00 - 22:00	5	2733	0.154	5	2733	0.146	5	2733	0.300
22:00 - 23:00	5	2733	0.088	5	2733	0.102	5	2733	0.190
23:00 - 24:00	5	2733	0.022	5	2733	0.022	5	2733	0.044
<b>Total Rates:</b>			<b>0.683</b>			<b>0.684</b>			<b>1.367</b>

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected:	464 - 4500 (units: sqm)
Survey date date range:	01/01/05 - 03/12/09
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	4	3300	0.000	4	3300	0.000	4	3300	0.000
01:00 - 02:00	3	3033	0.000	3	3033	0.000	3	3033	0.000
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	2400	0.000	1	2400	0.000	1	2400	0.000
11:00 - 12:00	2	3250	0.000	2	3250	0.000	2	3250	0.000
12:00 - 13:00	5	2733	0.007	5	2733	0.000	5	2733	0.007
13:00 - 14:00	5	2733	0.022	5	2733	0.015	5	2733	0.037
14:00 - 15:00	5	2733	0.000	5	2733	0.015	5	2733	0.015
15:00 - 16:00	5	2733	0.015	5	2733	0.007	5	2733	0.022
16:00 - 17:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
17:00 - 18:00	5	2733	0.007	5	2733	0.007	5	2733	0.014
18:00 - 19:00	5	2733	0.000	5	2733	0.007	5	2733	0.007
19:00 - 20:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
20:00 - 21:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
21:00 - 22:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
22:00 - 23:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
23:00 - 24:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
<b>Total Rates:</b>			0.051			0.051			0.102

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected:	464 - 4500 (units: sqm)
Survey date date range:	01/01/05 - 03/12/09
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

PSVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	4	3300	0.000	4	3300	0.000	4	3300	0.000
01:00 - 02:00	3	3033	0.000	3	3033	0.000	3	3033	0.000
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	2400	0.000	1	2400	0.000	1	2400	0.000
11:00 - 12:00	2	3250	0.000	2	3250	0.000	2	3250	0.000
12:00 - 13:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
13:00 - 14:00	5	2733	0.044	5	2733	0.044	5	2733	0.088
14:00 - 15:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
15:00 - 16:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
16:00 - 17:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
17:00 - 18:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
18:00 - 19:00	5	2733	0.007	5	2733	0.000	5	2733	0.007
19:00 - 20:00	5	2733	0.007	5	2733	0.000	5	2733	0.007
20:00 - 21:00	5	2733	0.000	5	2733	0.007	5	2733	0.007
21:00 - 22:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
22:00 - 23:00	5	2733	0.000	5	2733	0.007	5	2733	0.007
23:00 - 24:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
<b>Total Rates:</b>			0.058			0.058			0.116

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 464 - 4500 (units: sqm)  
 Survey date date range: 01/01/05 - 03/12/09  
 Number of weekdays (Monday-Friday): 5  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	4	3300	0.000	4	3300	0.008	4	3300	0.008
01:00 - 02:00	3	3033	0.000	3	3033	0.000	3	3033	0.000
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	2400	0.000	1	2400	0.000	1	2400	0.000
11:00 - 12:00	2	3250	0.000	2	3250	0.000	2	3250	0.000
12:00 - 13:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
13:00 - 14:00	5	2733	0.007	5	2733	0.007	5	2733	0.014
14:00 - 15:00	5	2733	0.015	5	2733	0.000	5	2733	0.015
15:00 - 16:00	5	2733	0.007	5	2733	0.007	5	2733	0.014
16:00 - 17:00	5	2733	0.022	5	2733	0.022	5	2733	0.044
17:00 - 18:00	5	2733	0.000	5	2733	0.000	5	2733	0.000
18:00 - 19:00	5	2733	0.037	5	2733	0.007	5	2733	0.044
19:00 - 20:00	5	2733	0.051	5	2733	0.022	5	2733	0.073
20:00 - 21:00	5	2733	0.015	5	2733	0.022	5	2733	0.037
21:00 - 22:00	5	2733	0.015	5	2733	0.015	5	2733	0.030
22:00 - 23:00	5	2733	0.007	5	2733	0.015	5	2733	0.022
23:00 - 24:00	5	2733	0.000	5	2733	0.015	5	2733	0.015
<b>Total Rates:</b>			0.176			0.140			0.316

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected:	464 - 4500 (units: sqm)
Survey date date range:	01/01/05 - 03/12/09
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE  
 Category : A - MULTIPLEX CINEMAS  
 VEHICLES

Selected regions and areas:

06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
08	NORTH WEST	
	MS MERSEYSIDE	1 days
09	NORTH	
	TV TEES VALLEY	1 days
12	CONNAUGHT	
	CS SLIGO	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

## Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area  
 Actual Range: 2323 to 3205 (units: sqm)  
 Range Selected by User: 464 to 7828 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 03/12/09

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Saturday 4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 4 days  
 Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Development Zone	1
Retail Zone	1
Built-Up Zone	1
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

Not Known	1 days
D2	3 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

10,001 to 15,000	1 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
75,001 to 100,000	2 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	4 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	CS-07-A-01 WINE STREET	GAIETY		SLIGO
	SLIGO Town Centre No Sub Category Total Gross floor area:		2500 sqm	
	Survey date: SATURDAY		16/06/07	Survey Type: MANUAL
2	MS-07-A-01 MONTROSE WAY SANDOWN PARK LIVERPOOL	CINEWORLD		MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) Retail Zone Total Gross floor area:		3000 sqm	
	Survey date: SATURDAY		16/06/07	Survey Type: MANUAL
3	SH-07-A-01 OLD POTTS WAY	CINEWORLD		SHROPSHIRE
	SHREWSBURY Edge of Town Centre Built-Up Zone Total Gross floor area:		2323 sqm	
	Survey date: SATURDAY		18/06/05	Survey Type: MANUAL
4	TV-07-A-01 MARINA WAY	VUE		TEES VALLEY
	HARTLEPOOL Edge of Town Centre Development Zone Total Gross floor area:		3205 sqm	
	Survey date: SATURDAY		30/04/05	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS  
VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	3	2608	0.038	3	2608	0.435	3	2608	0.473
01:00 - 02:00	2	2412	0.000	2	2412	0.228	2	2412	0.228
02:00 - 03:00	1	2323	0.000	1	2323	0.000	1	2323	0.000
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	2	3103	1.015	2	3103	0.338	2	3103	1.353
11:00 - 12:00	3	2843	1.993	3	2843	1.888	3	2843	3.881
12:00 - 13:00	3	2843	2.580	3	2843	2.193	3	2843	4.773
13:00 - 14:00	4	2757	2.902	4	2757	2.185	4	2757	5.087
14:00 - 15:00	4	2757	2.457	4	2757	1.868	4	2757	4.325
15:00 - 16:00	4	2757	2.711	4	2757	2.648	4	2757	5.359
16:00 - 17:00	4	2757	2.748	4	2757	3.174	4	2757	5.922
17:00 - 18:00	4	2757	2.720	4	2757	2.920	4	2757	5.640
18:00 - 19:00	4	2757	2.448	4	2757	2.584	4	2757	5.032
19:00 - 20:00	4	2757	4.262	4	2757	3.672	4	2757	7.934
20:00 - 21:00	4	2757	4.135	4	2757	3.482	4	2757	7.617
21:00 - 22:00	4	2757	2.503	4	2757	1.759	4	2757	4.262
22:00 - 23:00	4	2757	0.725	4	2757	2.820	4	2757	3.545
23:00 - 24:00	4	2757	0.181	4	2757	2.203	4	2757	2.384
<b>Total Rates:</b>			<b>33.418</b>			<b>34.397</b>			<b>67.815</b>

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 2323 - 3205 (units: sqm)  
 Survey date range: 01/01/05 - 03/12/09  
 Number of weekdays (Monday-Friday): 0  
 Number of Saturdays: 4  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	3	2608	0.000	3	2608	0.000	3	2608	0.000
01:00 - 02:00	2	2412	0.000	2	2412	0.000	2	2412	0.000
02:00 - 03:00	1	2323	0.000	1	2323	0.000	1	2323	0.000
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	2	3103	0.000	2	3103	0.000	2	3103	0.000
11:00 - 12:00	3	2843	0.012	3	2843	0.000	3	2843	0.012
12:00 - 13:00	3	2843	0.000	3	2843	0.012	3	2843	0.012
13:00 - 14:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
14:00 - 15:00	4	2757	0.009	4	2757	0.000	4	2757	0.009
15:00 - 16:00	4	2757	0.000	4	2757	0.009	4	2757	0.009
16:00 - 17:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
17:00 - 18:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
18:00 - 19:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
19:00 - 20:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
20:00 - 21:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
21:00 - 22:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
22:00 - 23:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
23:00 - 24:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
<b>Total Rates:</b>			0.021			0.021			0.042

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 2323 - 3205 (units: sqm)  
 Survey date range: 01/01/05 - 03/12/09  
 Number of weekdays (Monday-Friday): 0  
 Number of Saturdays: 4  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

PSVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	3	2608	0.000	3	2608	0.000	3	2608	0.000
01:00 - 02:00	2	2412	0.000	2	2412	0.000	2	2412	0.000
02:00 - 03:00	1	2323	0.000	1	2323	0.000	1	2323	0.000
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	2	3103	0.016	2	3103	0.000	2	3103	0.016
11:00 - 12:00	3	2843	0.000	3	2843	0.000	3	2843	0.000
12:00 - 13:00	3	2843	0.000	3	2843	0.012	3	2843	0.012
13:00 - 14:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
14:00 - 15:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
15:00 - 16:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
16:00 - 17:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
17:00 - 18:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
18:00 - 19:00	4	2757	0.009	4	2757	0.009	4	2757	0.018
19:00 - 20:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
20:00 - 21:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
21:00 - 22:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
22:00 - 23:00	4	2757	0.009	4	2757	0.009	4	2757	0.018
23:00 - 24:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
<b>Total Rates:</b>			0.034			0.030			0.064

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 2323 - 3205 (units: sqm)  
 Survey date range: 01/01/05 - 03/12/09  
 Number of weekdays (Monday-Friday): 0  
 Number of Saturdays: 4  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	3	2608	0.000	3	2608	0.000	3	2608	0.000
01:00 - 02:00	2	2412	0.000	2	2412	0.000	2	2412	0.000
02:00 - 03:00	1	2323	0.000	1	2323	0.000	1	2323	0.000
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	2	3103	0.000	2	3103	0.000	2	3103	0.000
11:00 - 12:00	3	2843	0.023	3	2843	0.000	3	2843	0.023
12:00 - 13:00	3	2843	0.012	3	2843	0.047	3	2843	0.059
13:00 - 14:00	4	2757	0.009	4	2757	0.009	4	2757	0.018
14:00 - 15:00	4	2757	0.009	4	2757	0.000	4	2757	0.009
15:00 - 16:00	4	2757	0.000	4	2757	0.009	4	2757	0.009
16:00 - 17:00	4	2757	0.009	4	2757	0.000	4	2757	0.009
17:00 - 18:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
18:00 - 19:00	4	2757	0.000	4	2757	0.009	4	2757	0.009
19:00 - 20:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
20:00 - 21:00	4	2757	0.000	4	2757	0.009	4	2757	0.009
21:00 - 22:00	4	2757	0.009	4	2757	0.000	4	2757	0.009
22:00 - 23:00	4	2757	0.000	4	2757	0.000	4	2757	0.000
23:00 - 24:00	4	2757	0.000	4	2757	0.009	4	2757	0.009
<b>Total Rates:</b>			0.071			0.092			0.163

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is:  $COUNT/TRP*FACT$ . Trip rates are then rounded to 3 decimal places.

#### Parameter summary

Trip rate parameter range selected: 2323 - 3205 (units: sqm)  
 Survey date date range: 01/01/05 - 03/12/09  
 Number of weekdays (Monday-Friday): 0  
 Number of Saturdays: 4  
 Number of Sundays: 0  
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

**Appendix E: JUNCTIONS / PICADY  
/ LINSIG Outputs**



Capabilities on project:  
Transportation

## **Appendix E1: ALHAMBRA JUNCTIONS Outputs**

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT  
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EMAIL: software@trl.co.uk  
-----

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS  
IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 08:13:16 on Wednesday, 17 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	150.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	30.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	200.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	899.99		0.31		0.12	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	702.90		0.29		0.11		0.18		0.41	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	660.83		0.23		0.23	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I		I		I		I		I		I		I		I
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.34	I	11.01	I	7.34	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.67	I	5.51	I	3.67	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.38	I	9.56	I	6.38	I



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	4.40	7.86	0.560		2.97	1.33	22.0		0.31
C-A	7.51								
C-B	0.13	8.01	0.017		0.02	0.02	0.3		0.13
A-B	2.64								
A-C	6.16								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	3.69	8.42	0.438		1.33	0.80	12.7		0.21
C-A	6.29								
C-B	0.11	8.33	0.014		0.02	0.01	0.2		0.12
A-B	2.21								
A-C	5.16								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	2.8	***
17.45	3.0	***
18.00	1.3	*
18.15	0.8	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY *	* QUEUEING * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY *	* INCLUSIVE QUEUEING * (MIN/VEH)
B-AC	404.7	269.8	142.4	0.35	142.5	0.35
C-A	689.6	459.7				
C-B	12.4	8.3	1.6	0.13	1.6	0.13
A-B	242.3	161.5				
A-C	565.7	377.1				
ALL	1914.6	1276.4	144.0	0.08	144.0	0.08

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:40:42 on Friday, 19 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	50.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	50.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65	0.27		0.11		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33	0.26		0.10		0.16		0.36		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29	0.21		0.21		I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Base + Dev Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I								
I	ARM	I	TO RISE	I	IS REACHED	I								
I	ARM	I		I	FALLING	I								
I	ARM	I		I	BEFORE	I								
I	ARM	I		I	AT TOP	I								
I	ARM	I		I	AFTER	I								
I	ARM	I		I	PEAK	I								
I	ARM	I		I	OF PEAK	I								
I	ARM	I		I	PEAK	I								
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.55	I	11.33	I	7.55	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.89	I	5.83	I	3.89	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.38	I	9.56	I	6.38	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.66	6.84	0.681		7.97	2.34	48.5		0.64	I
I	C-A	7.51									I
I	C-B	0.13	7.46	0.018		0.02	0.02	0.3		0.14	I
I	A-B	2.64									I
I	A-C	6.41									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.90	7.35	0.531		2.34	1.18	19.2		0.30	I
I	C-A	6.29									I
I	C-B	0.11	7.78	0.015		0.02	0.01	0.2		0.13	I
I	A-B	2.21									I
I	A-C	5.37									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.0	**
17.30	6.4	*****
17.45	8.0	*****
18.00	2.3	**
18.15	1.2	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	428.1	285.4	290.8
C-A	689.6	459.7	
C-B	12.4	8.3	1.7
A-B	242.3	161.5	
A-C	589.1	392.7	
ALL	1961.4	1307.6	292.5

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM A-B
786.65	0.27	0.11

Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
622.33	0.26	0.10	0.16	0.36

Intercept	Slope For Opposing	Slope For Opposing
STREAM C-B	STREAM A-C	STREAM A-B
620.29	0.21	0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2020 Base + Dev Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.52	14.29	9.52
ARM B	15.00	45.00	75.00	6.99	10.48	6.99
ARM C	15.00	45.00	75.00	4.78	7.16	4.78



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-AC	8.38	6.86	1.220		154.69	177.37	2490.4		23.73
C-A	5.36								
C-B	0.36	6.95	0.052		0.07	0.06	0.8		0.15
A-B	4.75								
A-C	6.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-AC	7.01	7.38	0.951		177.37	172.57	2624.6		23.84
C-A	4.49								
C-B	0.30	7.35	0.041		0.06	0.04	0.7		0.14
A-B	3.98								
A-C	5.58								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	7.5
12.15	31.4
12.30	93.1
12.45	154.7
13.00	177.4
13.15	172.6

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	DEMAND (VEH/H)	* QUEUEING * DELAY (MIN)	* INCLUSIVE QUEUEING * DELAY (MIN/VEH)
B-AC	769.4	512.9	8281.4	10.76
C-A	492.8	328.5		
C-B	33.0	22.0	5.1	0.15
A-B	436.3	290.9		
A-C	612.5	408.3		
ALL	2344.1	1562.7	8286.5	3.54

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:39:26 on Friday, 19 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	50.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	50.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65	0.27		0.11		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33	0.26		0.10		0.16		0.36		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29	0.21		0.21		I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.34	I	11.01	I	7.34	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.67	I	5.51	I	3.67	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.38	I	9.56	I	6.38	I



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	4.40	6.95	0.634		5.10	1.85	33.4		0.46
C-A	7.51								
C-B	0.13	7.51	0.018		0.02	0.02	0.3		0.14
A-B	2.64								
A-C	6.16								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	3.69	7.44	0.496		1.85	1.02	16.4		0.27
C-A	6.29								
C-B	0.11	7.82	0.014		0.02	0.01	0.2		0.13
A-B	2.21								
A-C	5.16								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.6	**
17.30	4.5	****
17.45	5.1	*****
18.00	1.9	**
18.15	1.0	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	404.7	211.8	0.52
C-A	689.6		
C-B	12.4	1.7	0.14
A-B	242.3		
A-C	565.7	377.1	
ALL	1914.6	213.5	0.11

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM A-B
786.65	0.27	0.11

Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
622.33	0.26	0.10	0.16	0.36

Intercept	Slope For Opposing	Slope For Opposing
STREAM C-B	STREAM A-C	STREAM A-B
620.29	0.21	0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2020 Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.71	13.07	8.71
ARM B	15.00	45.00	75.00	5.51	8.27	5.51
ARM C	15.00	45.00	75.00	4.78	7.16	4.78



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	12.45-13.00										I
I	B-AC	6.61	7.20	0.918		54.93	48.01	772.1		7.19	I
I	C-A	5.36									I
I	C-B	0.36	7.16	0.050		0.07	0.05	0.8		0.15	I
I	A-B	4.06									I
I	A-C	6.38									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	5.53	7.68	0.720		48.01	18.16	496.3		4.50	I
I	C-A	4.49									I
I	C-B	0.30	7.53	0.040		0.05	0.04	0.6		0.14	I
I	A-B	3.40									I
I	A-C	5.35									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	2.3	**
12.15	6.4	*****
12.30	31.2	*****
12.45	54.9	*****
13.00	48.0	*****
13.15	18.2	*****

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		I
I	I	I	I	I	* DELAY *	I	* DELAY *	I		I
I	I	I	(VEH)	I	(MIN)	I	(MIN)	I	(MIN/VEH)	I
I	B-AC	I	607.0	I	404.7	I	2303.7	I	3.80	I
I	C-A	I	492.8	I	328.5	I		I		I
I	C-B	I	33.0	I	22.0	I	4.9	I	0.15	I
I	A-B	I	373.0	I	248.7	I		I		I
I	A-C	I	586.4	I	390.9	I		I		I
I	ALL	I	2092.2	I	1394.8	I	2308.6	I	1.10	I
									2330.1	I
									1.11	I

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
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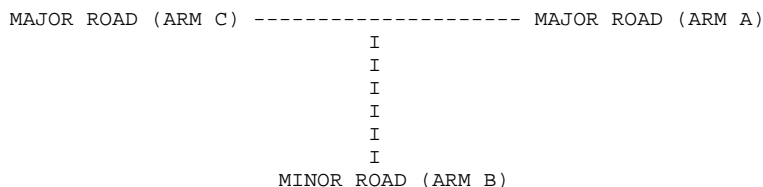
Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 08:48:04 on Friday, 19 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----



ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	50.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	50.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65		0.27		0.11	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33		0.26		0.10		0.16		0.36	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29		0.21		0.21	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Base + Dev Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I								
I	ARM	I	TO RISE	I	IS REACHED	I								
I	ARM	I		I	FALLING	I								
I	ARM	I		I	BEFORE	I								
I	ARM	I		I	AT TOP	I								
I	ARM	I		I	AFTER	I								
I	ARM	I		I	PEAK	I								
I	ARM	I		I	OF PEAK	I								
I	ARM	I		I	PEAK	I								
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.55	I	11.33	I	7.55	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.89	I	5.83	I	3.89	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.38	I	9.56	I	6.38	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.66	6.84	0.681		7.97	2.34	48.5		0.64	I
I	C-A	7.51									I
I	C-B	0.13	7.46	0.018		0.02	0.02	0.3		0.14	I
I	A-B	2.64									I
I	A-C	6.41									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.90	7.35	0.531		2.34	1.18	19.2		0.30	I
I	C-A	6.29									I
I	C-B	0.11	7.78	0.015		0.02	0.01	0.2		0.13	I
I	A-B	2.21									I
I	A-C	5.37									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.0	**
17.30	6.4	*****
17.45	8.0	*****
18.00	2.3	**
18.15	1.2	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	428.1	285.4	290.8
C-A	689.6	459.7	
C-B	12.4	8.3	1.7
A-B	242.3	161.5	
A-C	589.1	392.7	
ALL	1961.4	1307.6	292.5

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM A-B
786.65	0.27	0.11

Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
622.33	0.26	0.10	0.16	0.36

Intercept	Slope For Opposing	Slope For Opposing
STREAM C-B	STREAM A-C	STREAM A-B
620.29	0.21	0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2020 Base + Dev Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.52	14.29	9.52
ARM B	15.00	45.00	75.00	6.99	10.48	6.99
ARM C	15.00	45.00	75.00	4.78	7.16	4.78



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	12.45-13.00										I
I	B-AC	8.38	6.86	1.220		154.69	177.37	2490.4		23.73	I
I	C-A	5.36									I
I	C-B	0.36	6.95	0.052		0.07	0.06	0.8		0.15	I
I	A-B	4.75									I
I	A-C	6.67									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	7.01	7.38	0.951		177.37	172.57	2624.6		23.84	I
I	C-A	4.49									I
I	C-B	0.30	7.35	0.041		0.06	0.04	0.7		0.14	I
I	A-B	3.98									I
I	A-C	5.58									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
12.00	7.5	*****
12.15	31.4	*****
12.30	93.1	*****
12.45	154.7	*****
13.00	177.4	*****
13.15	172.6	*****

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I						
I	I	I	I	I	* DELAY *	I	* DELAY *	I						
I	I	I	(VEH)	I	(MIN)	I	(MIN)	I						
I	I	I	(VEH/H)	I	(MIN/VEH)	I	(MIN/VEH)	I						
I	B-AC	I	769.4	I	512.9	I	8281.4	I	10.76	I	10300.4	I	13.39	I
I	C-A	I	492.8	I	328.5	I		I		I		I		I
I	C-B	I	33.0	I	22.0	I	5.1	I	0.15	I	5.1	I	0.15	I
I	A-B	I	436.3	I	290.9	I		I		I		I		I
I	A-C	I	612.5	I	408.3	I		I		I		I		I
I	ALL	I	2344.1	I	1562.7	I	8286.5	I	3.54	I	10305.5	I	4.40	I

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk  
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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:40:13 on Friday, 19 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	( W ) 8.50 M.	I
I	CENTRAL RESERVE WIDTH	I	( WCR ) 0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	( WC-B ) 2.20 M.	I
I	- VISIBILITY	I	( VC-B ) 80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I	( VB-C ) 50.0 M.	I
I	- VISIBILITY TO RIGHT	I	( VB-A ) 50.0 M.	I
I	- LANE 1 WIDTH	I	( WB-C ) 5.00 M.	I
I	- LANE 2 WIDTH	I	( WB-A ) 0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65	0.27		0.11		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33	0.26		0.10		0.16		0.36		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29	0.21		0.21		I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2015 Base Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I								
I	ARM	I	TO RISE	I	IS REACHED	I								
I	ARM	I		I	FALLING	I								
I	ARM	I		I	BEFORE	I								
I	ARM	I		I	AT TOP	I								
I	ARM	I		I	AFTER	I								
I	ARM	I		I	PEAK	I								
I	ARM	I		I	OF PEAK	I								
I	ARM	I		I	PEAK	I								
I	ARM A	I	15.00	I	45.00	I	75.00	I	6.84	I	10.26	I	6.84	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.41	I	5.12	I	3.41	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	5.94	I	8.91	I	5.94	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.09	7.16	0.572		3.06	1.40	23.3		0.35	I
I	C-A	7.00									I
I	C-B	0.12	7.64	0.016		0.02	0.02	0.2		0.13	I
I	A-B	2.46									I
I	A-C	5.74									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.43	7.61	0.450		1.40	0.84	13.4		0.24	I
I	C-A	5.86									I
I	C-B	0.10	7.93	0.013		0.02	0.01	0.2		0.13	I
I	A-B	2.06									I
I	A-C	4.81									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.3	*
17.30	2.9	***
17.45	3.1	***
18.00	1.4	*
18.15	0.8	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	375.8	147.2	0.39
C-A	642.8		
C-B	11.0	1.5	0.13
A-B	225.7		
A-C	527.2		
ALL	1782.5	148.7	0.08

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM A-B
786.65	0.27	0.11

Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
622.33	0.26	0.10	0.16	0.36

Intercept	Slope For Opposing	Slope For Opposing
STREAM C-B	STREAM A-C	STREAM A-B
620.29	0.21	0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2015 Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
A	15.00	45.00	75.00	8.10	12.15	8.10
B	15.00	45.00	75.00	5.14	7.71	5.14
C	15.00	45.00	75.00	4.44	6.66	4.44



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-AC	6.16	7.41	0.831		30.95	15.70	349.9		3.34
C-A	4.99								
C-B	0.33	7.32	0.045		0.06	0.05	0.7		0.14
A-B	3.78								
A-C	5.93								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-AC	5.16	7.85	0.657		15.70	2.09	74.8		0.78
C-A	4.18								
C-B	0.28	7.66	0.036		0.05	0.04	0.6		0.14
A-B	3.16								
A-C	4.97								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	1.8 **
12.15	4.0 ****
12.30	18.6 *****
12.45	31.0 *****
13.00	15.7 *****
13.15	2.1 **

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.0
12.30	0.1
12.45	0.1
13.00	0.0
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL CAPACITY (VEH/H)	* QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN)
B-AC	565.7	377.1	1048.0	1.85
C-A	458.3	305.6		
C-B	30.3	20.2	4.4	0.14
A-B	346.9	231.2		
A-C	545.1	363.4		
ALL	1946.3	1297.5	1052.3	0.54

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:34:45 on Tuesday, 16 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	150.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	30.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	200.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	899.99		0.31		0.12	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	702.90		0.29		0.11		0.18		0.41	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	660.83		0.23		0.23	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2015 Base Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I		I		I		I		I		I		I		I
I	ARM A	I	15.00	I	45.00	I	75.00	I	6.84	I	10.26	I	6.84	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.41	I	5.12	I	3.41	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	5.94	I	8.91	I	5.94	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.09	8.10	0.505		2.03	1.05	16.9		0.26	I
I	C-A	7.00									I
I	C-B	0.12	8.14	0.015		0.02	0.02	0.2		0.12	I
I	A-B	2.46									I
I	A-C	5.74									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.43	8.62	0.397		1.05	0.67	10.6		0.19	I
I	C-A	5.86									I
I	C-B	0.10	8.45	0.012		0.02	0.01	0.2		0.12	I
I	A-B	2.06									I
I	A-C	4.81									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	1.0	*
17.30	2.0	**
17.45	2.0	**
18.00	1.1	*
18.15	0.7	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND (VEH)	I	250.5 (VEH/H)	I	* QUEUEING * * DELAY *	I	(MIN)	I	(MIN/VEH)	I	* INCLUSIVE QUEUEING * * DELAY *	I	(MIN)	I	(MIN/VEH)	I
I	B-AC	I	375.8	I	250.5	I	107.3	I	0.29	I	107.3	I	0.29	I		I		I
I	C-A	I	642.8	I	428.5	I		I		I		I		I		I		I
I	C-B	I	11.0	I	7.3	I	1.4	I	0.13	I	1.4	I	0.13	I		I		I
I	A-B	I	225.7	I	150.5	I		I		I		I		I		I		I
I	A-C	I	527.2	I	351.4	I		I		I		I		I		I		I
I	ALL	I	1782.5	I	1188.3	I	108.7	I	0.06	I	108.7	I	0.06	I		I		I

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

Capabilities on project:  
Transportation

## **Appendix E2: WESLEY STREET / LAMBRA ROAD JUNCTIONS Outputs**

<b>Junctions 8</b>
<b>ARCADY 8 - Roundabout Module</b>
Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2015
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**Filename:** Wesley\_Lambra\_Mini.arc8

**Path:** F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\ARCADY

**Report generation date:** 24/06/2015 08:49:28

« (Default Analysis Set) - 2020 Sat Base + Dev, PM

- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

**Summary of junction performance**

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2020 Sat Base + Dev			
Arm 1	7.75	74.29	0.92	F
Arm 2	4.30	42.72	0.83	E
Arm 3	1.60	15.64	0.62	C
Arm 4	14.59	89.61	0.98	F

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2020 Sat Base + Dev, PM" model duration: 16:45 - 18:15

"D2 - 2020 Base + Dev, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 24/06/2015 08:49:27

**File summary**

<b>Title</b>	Wesley_Lambra_Mini
<b>Location</b>	Barnsley
<b>Site Number</b>	
<b>Date</b>	19/06/2015
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	mansonj
<b>Description</b>	

## Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

## Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

# (Default Analysis Set) - 2020 Sat Base + Dev, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

## Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2020 Sat Base + Dev, PM	2020 Sat Base + Dev	PM		ONE HOUR	16:45	18:15	90	15		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	1,2,3,4	60.20	F

## Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

# Arms

## Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

## Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

## Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	4.00	4.00	4.00	0.00	17.00	12.00	0.00	
2	3.65	3.65	4.00	1.00	19.00	15.00	0.00	
3	4.00	4.00	4.00	0.00	17.00	12.00	0.00	
4	4.00	4.00	4.00	0.00	17.00	12.00	0.00	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.565	702.164
2		(calculated)	(calculated)	0.592	772.127
3		(calculated)	(calculated)	0.565	744.764
4		(calculated)	(calculated)	0.565	744.764

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Flows

### Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
	✓	✓	✓	HV Percentages	2.00				✓	✓

## Entry Flows

### General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	366.00	100.000
2	ONE HOUR	✓	352.00	100.000
3	ONE HOUR	✓	342.00	100.000
4	ONE HOUR	✓	552.00	100.000

# Turning Proportions

## Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	217.000	149.000
	2	0.000	0.000	275.000	77.000
	3	104.000	98.000	0.000	140.000
	4	214.000	225.000	113.000	0.000

## Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.00	0.59	0.41
	2	0.00	0.00	0.78	0.22
	3	0.30	0.29	0.00	0.41
	4	0.39	0.41	0.20	0.00

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 - (16:45-17:00)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

## Heavy Vehicle Percentages - Junction 1 - (16:45-17:00)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

## Average PCU Per Vehicle - Junction 1 - (17:00-17:15)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

**Heavy Vehicle Percentages - Junction 1 - (17:00-17:15)**

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

**Average PCU Per Vehicle - Junction 1 - (17:15-17:30)**

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

**Heavy Vehicle Percentages - Junction 1 - (17:15-17:30)**

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

**Average PCU Per Vehicle - Junction 1 - (17:30-17:45)**

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

**Heavy Vehicle Percentages - Junction 1 - (17:30-17:45)**

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

**Average PCU Per Vehicle - Junction 1 - (17:45-18:00)**

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

### Heavy Vehicle Percentages - Junction 1 - (17:45-18:00)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

### Average PCU Per Vehicle - Junction 1 - (18:00-18:15)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

### Heavy Vehicle Percentages - Junction 1 - (18:00-18:15)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.92	74.29	7.75	F
2	0.83	42.72	4.30	E
3	0.62	15.64	1.60	C
4	0.98	89.61	14.59	F

### Main Results for each time segment

#### Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	275.54	271.18	323.51	0.00	519.52	0.530	1.09	14.261	B
2	265.00	261.52	354.91	0.00	561.98	0.472	0.87	11.851	B
3	257.48	254.90	167.60	0.00	650.14	0.396	0.64	9.051	A
4	415.57	409.05	150.55	0.00	659.77	0.630	1.63	14.021	B

**Main results: (17:00-17:15)**

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	329.03	325.43	388.11	0.00	483.05	0.681	1.99	22.324	C
2	316.44	313.98	425.84	0.00	519.98	0.609	1.49	17.265	C
3	307.45	306.32	201.17	0.00	631.19	0.487	0.93	11.041	B
4	496.24	490.48	180.92	0.00	642.62	0.772	3.07	22.800	C

**Main results: (17:15-17:30)**

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	402.97	386.47	460.23	0.00	442.33	0.911	6.12	53.171	F
2	387.56	378.56	504.50	0.00	473.40	0.819	3.73	35.018	E
3	376.55	374.05	240.14	0.00	609.19	0.618	1.55	15.145	C
4	607.76	576.57	220.93	0.00	620.03	0.980	10.87	59.009	F

**Main results: (17:30-17:45)**

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	402.97	396.45	470.87	0.00	436.33	0.924	7.75	74.295	F
2	387.56	385.31	517.82	0.00	465.52	0.833	4.30	42.718	E
3	376.55	376.36	245.68	0.00	606.06	0.621	1.60	15.642	C
4	607.76	592.87	222.30	0.00	619.26	0.981	14.59	89.609	F

**Main results: (17:45-18:00)**

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	329.03	349.45	418.90	0.00	465.67	0.707	2.64	34.995	D
2	316.44	326.34	459.80	0.00	499.87	0.633	1.82	21.785	C
3	307.45	309.88	213.65	0.00	624.14	0.493	0.99	11.541	B
4	496.24	539.10	183.03	0.00	641.43	0.774	3.88	43.589	E

**Main results: (18:00-18:15)**

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	275.54	281.33	333.74	0.00	513.74	0.536	1.20	15.849	C
2	265.00	268.53	368.11	0.00	554.16	0.478	0.94	12.754	B
3	257.48	258.76	173.27	0.00	646.94	0.398	0.67	9.304	A
4	415.57	423.95	152.84	0.00	658.48	0.631	1.78	15.854	C

<h1>Junctions 8</h1>
<h2>ARCADY 8 - Roundabout Module</h2>
Version: 8.0.4.487 [15039,24/03/2014] © Copyright TRL Limited, 2015
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**Filename:** Wesley\_Lambra\_Mini.arc8

**Path:** F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\ARCADY

**Report generation date:** 24/06/2015 08:50:41

« (Default Analysis Set) - 2020 Base + Dev, PM

- » Junction Network
- » Arms
- » Traffic Flows
- » Entry Flows
- » Turning Proportions
- » Vehicle Mix
- » Results

### Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2020 Base + Dev			
Arm 1	1.22	13.63	0.55	B
Arm 2	0.10	8.50	0.09	A
Arm 3	0.53	8.71	0.35	A
Arm 4	0.62	8.01	0.38	A

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2020 Sat Base + Dev, PM" model duration: 16:45 - 18:15

"D2 - 2020 Base + Dev, PM " model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 24/06/2015 08:50:40

### File summary

<b>Title</b>	Wesley_Lambra_Mini
<b>Location</b>	Barnsley
<b>Site Number</b>	
<b>Date</b>	19/06/2015
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	mansonj
<b>Description</b>	

## Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

## Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

# (Default Analysis Set) - 2020 Base + Dev, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

## Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2020 Base + Dev, PM	2020 Base + Dev	PM		ONE HOUR	16:45	18:15	90	15		

# Junction Network

## Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	Mini-roundabout	1,2,3,4	10.32	B

## Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

# Arms

## Arms

Arm	Arm	Name	Description
1	1	(untitled)	
2	2	(untitled)	
3	3	(untitled)	
4	4	(untitled)	

## Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00
4	0.00	99999.00

## Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	4.00	4.00	4.00	0.00	17.00	12.00	0.00	
2	3.65	3.65	4.00	1.00	19.00	15.00	0.00	
3	4.00	4.00	4.00	0.00	17.00	12.00	0.00	
4	4.00	4.00	4.00	0.00	17.00	12.00	0.00	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.565	702.164
2		(calculated)	(calculated)	0.592	772.127
3		(calculated)	(calculated)	0.565	744.764
4		(calculated)	(calculated)	0.565	744.764

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Flows

### Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

## Entry Flows

### General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	296.00	100.000
2	ONE HOUR	✓	37.00	100.000
3	ONE HOUR	✓	201.00	100.000
4	ONE HOUR	✓	254.00	100.000

# Turning Proportions

## Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	138.000	158.000
	2	0.000	0.000	18.000	19.000
	3	25.000	0.000	0.000	176.000
	4	73.000	5.000	176.000	0.000

## Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.00	0.47	0.53
	2	0.00	0.00	0.49	0.51
	3	0.12	0.00	0.00	0.88
	4	0.29	0.02	0.69	0.00

# Vehicle Mix

## Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

## Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.55	13.63	1.22	B
2	0.09	8.50	0.10	A
3	0.35	8.71	0.53	A
4	0.38	8.01	0.62	A

## Main Results for each time segment

### Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	222.84	220.67	135.27	0.00	625.79	0.356	0.54	8.842	A
2	27.86	27.65	352.20	0.00	563.58	0.049	0.05	6.717	A
3	151.32	150.17	131.99	0.00	670.25	0.226	0.29	6.906	A
4	191.22	189.83	18.68	0.00	734.22	0.260	0.35	6.598	A

### Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	266.10	265.25	162.43	0.00	610.46	0.436	0.76	10.402	B
2	33.26	33.20	423.19	0.00	521.55	0.064	0.07	7.371	A
3	180.69	180.34	158.63	0.00	655.21	0.276	0.38	7.576	A
4	228.34	227.94	22.43	0.00	732.10	0.312	0.45	7.134	A

### Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	325.90	324.15	198.81	0.00	589.92	0.552	1.20	13.453	B
2	40.74	40.63	517.47	0.00	465.72	0.087	0.09	8.467	A
3	221.31	220.70	193.89	0.00	635.30	0.348	0.53	8.669	A
4	279.66	279.00	27.45	0.00	729.27	0.383	0.61	7.983	A

### Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	325.90	325.83	199.27	0.00	589.66	0.553	1.22	13.634	B
2	40.74	40.74	519.59	0.00	464.47	0.088	0.10	8.495	A
3	221.31	221.29	194.84	0.00	634.76	0.349	0.53	8.706	A
4	279.66	279.64	27.52	0.00	729.23	0.384	0.62	8.007	A

### Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	266.10	267.80	163.17	0.00	610.04	0.436	0.79	10.570	B
2	33.26	33.37	426.47	0.00	519.61	0.064	0.07	7.407	A
3	180.69	181.28	160.08	0.00	654.39	0.276	0.39	7.617	A
4	228.34	228.98	22.55	0.00	732.03	0.312	0.46	7.167	A

### Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	222.84	223.75	136.56	0.00	625.07	0.357	0.56	8.990	A
2	27.86	27.92	356.54	0.00	561.01	0.050	0.05	6.755	A
3	151.32	151.69	133.77	0.00	669.24	0.226	0.30	6.959	A
4	191.22	191.64	18.87	0.00	734.11	0.260	0.36	6.640	A

Capabilities on project:  
Transportation

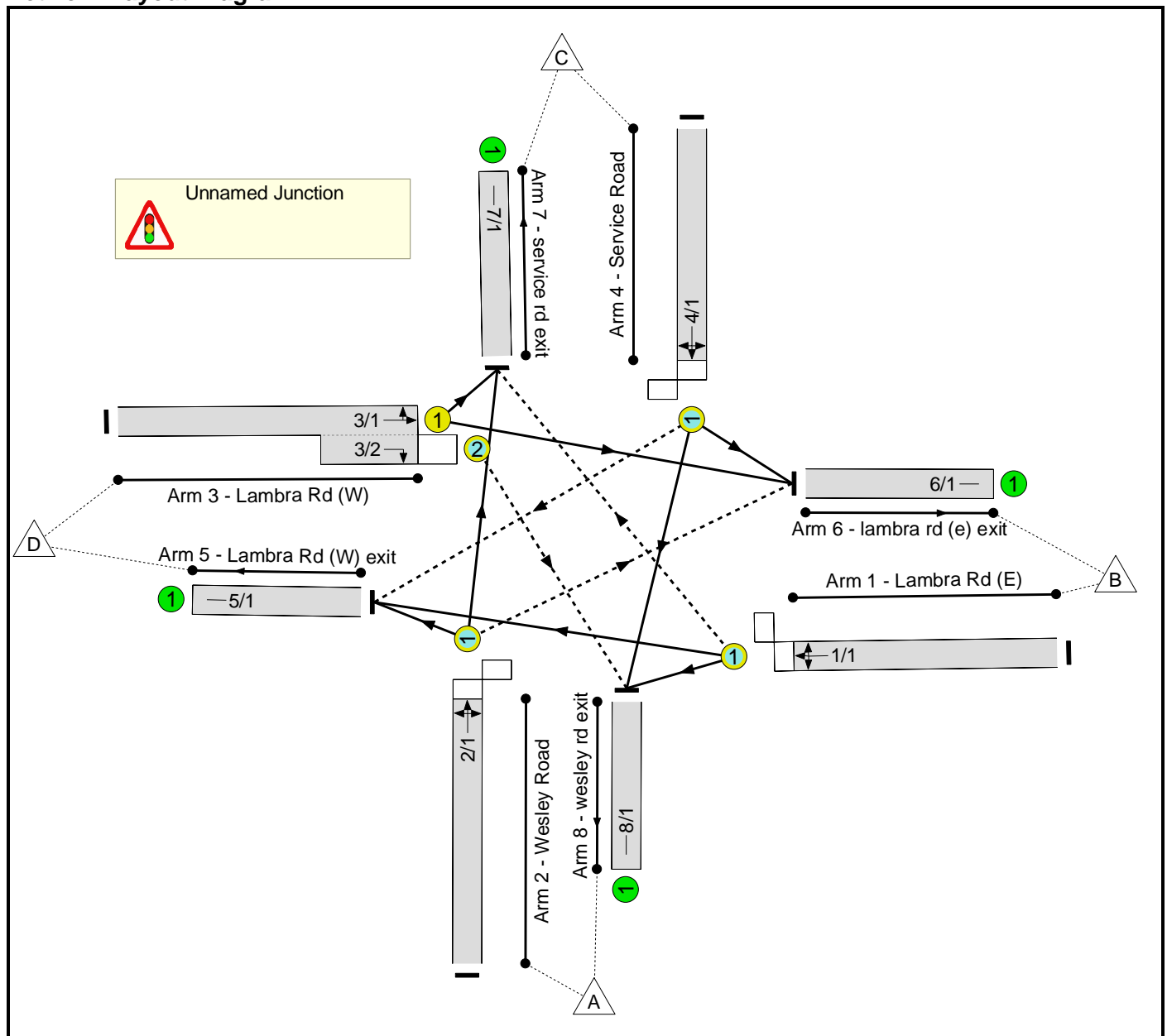
## **Appendix E3: WESLEY STREET / LAMBRA ROAD LINSIG Outputs**

Full Input Data And Results  
Full Input Data And Results

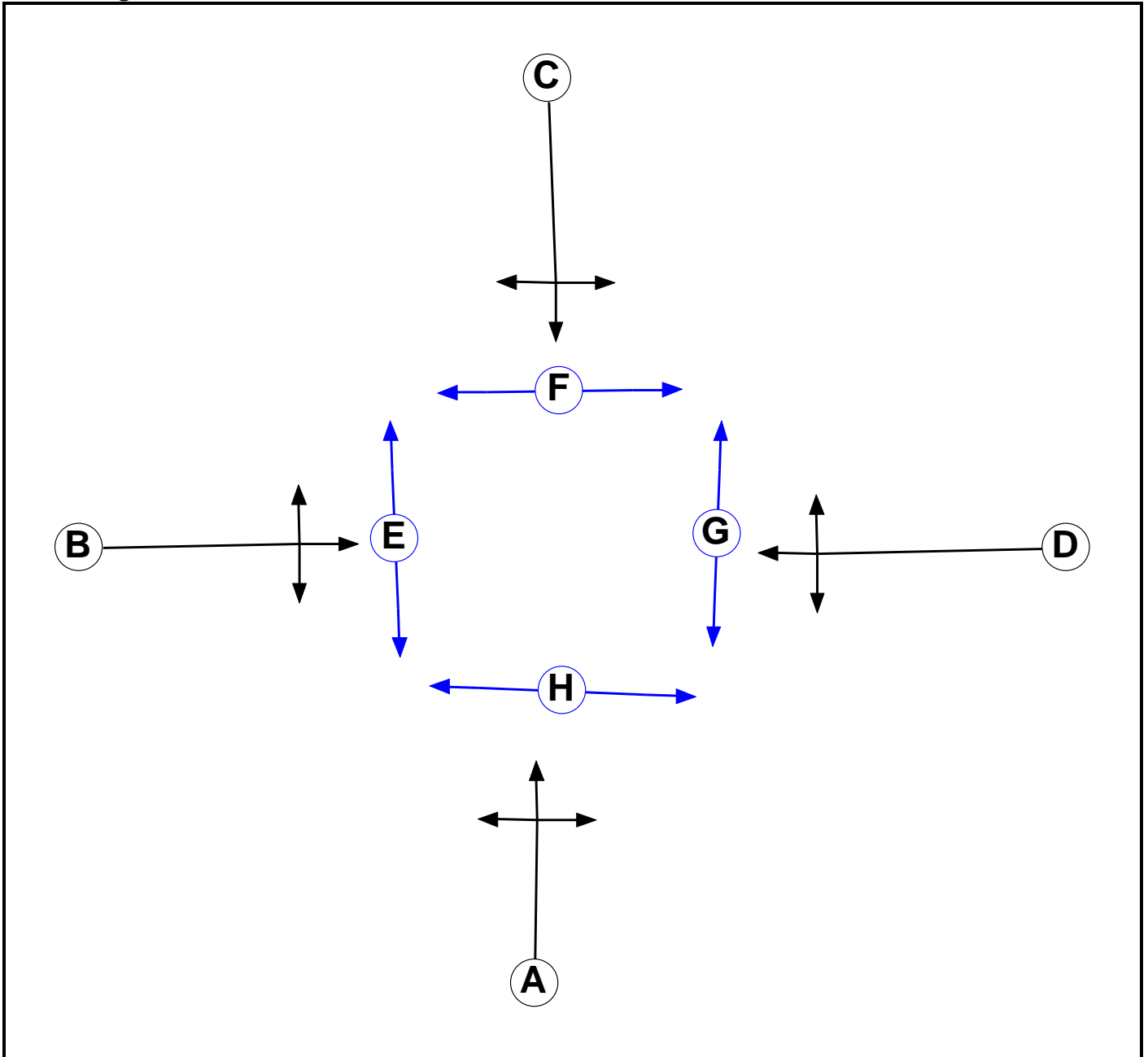
User and Project Details

Project:	
Title:	
Location:	
File name:	Lambra Road - Mittigation (rev A).lsg3x
Author:	
Company:	
Address:	
Notes:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7

Full Input Data And Results

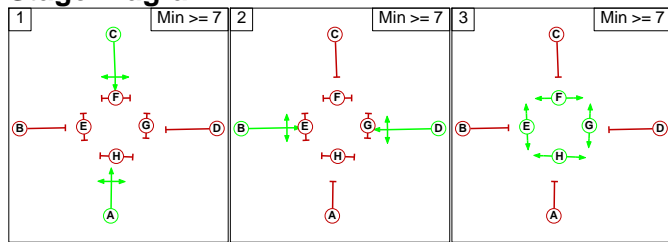
**Phase Intergrens Matrix**

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		5	-	5	7	7	7	5
	B	5		5	-	5	7	7	7
	C	-	5		-	7	5	7	7
	D	5	-	-		7	7	5	7
	E	8	8	8	8		-	-	-
	F	8	8	8	8	-		-	-
	G	8	8	8	8	-	-		-
	H	8	8	8	8	-	-	-	

**Phases in Stage**

Stage No.	Phases in Stage
1	A C
2	B D
3	E F G H

**Stage Diagram**



**Phase Delays**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

**Prohibited Stage Change**

		To Stage		
		1	2	3
From Stage	1		5	7
	2	5		7
	3	8	8	

Full Input Data And Results

**Give-Way Lane Input Data**

Junction: Unnamed Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (Lambra Rd (E))	7/1 (Right)	1439	0	3/1	1.09	To 6/1 (Ahead) To 7/1 (Left)	2.00	1.00	0.50	2	2.00
2/1 (Wesley Road)	6/1 (Right)	1439	0	4/1	1.09	To 6/1 (Left) To 8/1 (Ahead)	2.00	1.00	0.50	2	2.00
3/2 (Lambra Rd (W))	8/1 (Right)	1439	0	1/1	1.09	To 5/1 (Ahead) To 8/1 (Left)	2.00	-	0.50	2	2.00
4/1 (Service Road)	5/1 (Right)	1439	0	2/1	1.09	To 5/1 (Left) To 7/1 (Ahead)	2.00	1.00	0.50	2	2.00

Full Input Data And Results

**Lane Input Data**

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Lambra Rd (E))	O	D	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 5 Ahead	Inf
											Arm 7 Right	15.00
											Arm 8 Left	8.00
											Arm 5 Left	10.00
2/1 (Wesley Road)	O	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Right	15.00
											Arm 7 Ahead	Inf
3/1 (Lambra Rd (W))	U	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	6.00
3/2 (Lambra Rd (W))	O	B	2	3	5.0	Geom	-	3.25	0.00	Y	Arm 8 Right	12.00
											Arm 5 Right	12.00
4/1 (Service Road)	O	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 6 Left	6.00
											Arm 8 Ahead	Inf
5/1 (Lambra Rd (W) exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (lambra rd (e) exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (service rd exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (wesley rd exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2020 PM base plus dev'	08:00	09:00	01:00	
2: '2020 SAT base plus dev'	08:00	09:00	01:00	

Full Input Data And Results

**Scenario 1: '2020 PM'** (FG1: '2020 PM base plus dev', Plan 1: 'with peds')

**Traffic Flows, Desired**

**Desired Flow :**

Origin	Destination					
	A	B	C	D	Tot.	
A	0	176	5	73	254	
B	176	0	26	25	227	
C	80	78	0	0	158	
D	158	138	0	0	296	
Tot.	414	392	31	98	935	

**Traffic Lane Flows**

Lane	Scenario 1: 2020 PM
<b>Junction: Unnamed Junction</b>	
1/1	227
2/1	254
3/1 (with short)	296(In) 138(Out)
3/2 (short)	158
4/1	158
5/1	98
6/1	392
7/1	31
8/1	414

Full Input Data And Results

**Lane Saturation Flows**

Junction: Unnamed Junction									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (Lambra Rd (E))	4.00	0.00	Y	Arm 5 Ahead	Inf	11.0 %	1742	1742	
				Arm 7 Right	15.00	11.5 %			
				Arm 8 Left	8.00	77.5 %			
2/1 (Wesley Road)	3.50	0.00	Y	Arm 5 Left	10.00	28.7 %	1766	1766	
				Arm 6 Right	15.00	69.3 %			
				Arm 7 Ahead	Inf	2.0 %			
3/1 (Lambra Rd (W))	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980	
				Arm 7 Left	6.00	0.0 %			
3/2 (Lambra Rd (W))	3.25	0.00	Y	Arm 8 Right	12.00	100.0 %	1724	1724	
				Arm 5 Right	12.00	0.0 %			
4/1 (Service Road)	3.65	0.00	Y	Arm 6 Left	6.00	49.4 %	1762	1762	
				Arm 8 Ahead	Inf	50.6 %			
				Infinite Saturation Flow					
5/1 (Lambra Rd (W) exit Lane 1)				Infinite Saturation Flow				Inf	Inf
6/1 (Lambra rd (e) exit Lane 1)				Infinite Saturation Flow				Inf	Inf
7/1 (service rd exit Lane 1)				Infinite Saturation Flow				Inf	Inf
8/1 (wesley rd exit Lane 1)				Infinite Saturation Flow				Inf	Inf

**Scenario 2: '2020 SAT'** (FG2: '2020 SAT base plus dev', Plan 1: 'with peds')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	113	225	214	552
	B	140	0	114	104	358
	C	89	317	0	0	406
	D	376	217	0	0	593
	Tot.	605	647	339	318	1909

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 2: 2020 SAT
<b>Junction: Unnamed Junction</b>	
1/1	358
2/1	552
3/1 (with short)	593(In) 217(Out)
3/2 (short)	376
4/1	406
5/1	318
6/1	647
7/1	339
8/1	605

**Lane Saturation Flows**

<b>Junction: Unnamed Junction</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Lambra Rd (E))	4.00	0.00	Y	Arm 5 Ahead	Inf	29.1 %	1823	1823
				Arm 7 Right	15.00	31.8 %		
				Arm 8 Left	8.00	39.1 %		
2/1 (Wesley Road)	3.50	0.00	Y	Arm 5 Left	10.00	38.8 %	1822	1822
				Arm 6 Right	15.00	20.5 %		
				Arm 7 Ahead	Inf	40.8 %		
3/1 (Lambra Rd (W))	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
				Arm 7 Left	6.00	0.0 %		
3/2 (Lambra Rd (W))	3.25	0.00	Y	Arm 8 Right	12.00	100.0 %	1724	1724
4/1 (Service Road)	3.65	0.00	Y	Arm 5 Right	12.00	0.0 %	1657	1657
				Arm 6 Left	6.00	78.1 %		
				Arm 8 Ahead	Inf	21.9 %		
5/1 (Lambra Rd (W) exit Lane 1)				Infinite Saturation Flow			Inf	Inf
6/1 (lambra rd (e) exit Lane 1)				Infinite Saturation Flow			Inf	Inf
7/1 (service rd exit Lane 1)				Infinite Saturation Flow			Inf	Inf
8/1 (wesley rd exit Lane 1)				Infinite Saturation Flow			Inf	Inf

Full Input Data And Results

**Scenario 3: '2020 PM'** (FG1: '2020 PM base plus dev', Plan 2: 'no peds')

**Traffic Flows, Desired**

**Desired Flow :**

Origin	Destination					
	A	B	C	D	Tot.	
A	0	176	5	73	254	
B	176	0	26	25	227	
C	80	78	0	0	158	
D	158	138	0	0	296	
Tot.	414	392	31	98	935	

**Traffic Lane Flows**

Lane	Scenario 3: 2020 PM
<b>Junction: Unnamed Junction</b>	
1/1	227
2/1	254
3/1 (with short)	296(In) 138(Out)
3/2 (short)	158
4/1	158
5/1	98
6/1	392
7/1	31
8/1	414

Full Input Data And Results

**Lane Saturation Flows**

Junction: Unnamed Junction									
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)	
1/1 (Lambra Rd (E))	4.00	0.00	Y	Arm 5 Ahead	Inf	11.0 %	1742	1742	
				Arm 7 Right	15.00	11.5 %			
				Arm 8 Left	8.00	77.5 %			
2/1 (Wesley Road)	3.50	0.00	Y	Arm 5 Left	10.00	28.7 %	1766	1766	
				Arm 6 Right	15.00	69.3 %			
				Arm 7 Ahead	Inf	2.0 %			
3/1 (Lambra Rd (W))	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980	
				Arm 7 Left	6.00	0.0 %			
3/2 (Lambra Rd (W))	3.25	0.00	Y	Arm 8 Right	12.00	100.0 %	1724	1724	
				Arm 5 Right	12.00	0.0 %			
4/1 (Service Road)	3.65	0.00	Y	Arm 6 Left	6.00	49.4 %	1762	1762	
				Arm 8 Ahead	Inf	50.6 %			
				Infinite Saturation Flow					
5/1 (Lambra Rd (W) exit Lane 1)				Infinite Saturation Flow				Inf	Inf
6/1 (Lambra rd (e) exit Lane 1)				Infinite Saturation Flow				Inf	Inf
7/1 (service rd exit Lane 1)				Infinite Saturation Flow				Inf	Inf
8/1 (wesley rd exit Lane 1)				Infinite Saturation Flow				Inf	Inf

**Scenario 4: '2020 SAT'** (FG2: '2020 SAT base plus dev', Plan 2: 'no peds')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	113	225	214	552
	B	140	0	114	104	358
	C	89	317	0	0	406
	D	376	217	0	0	593
	Tot.	605	647	339	318	1909

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 4: 2020 SAT
<b>Junction: Unnamed Junction</b>	
1/1	358
2/1	552
3/1 (with short)	593(In) 217(Out)
3/2 (short)	376
4/1	406
5/1	318
6/1	647
7/1	339
8/1	605

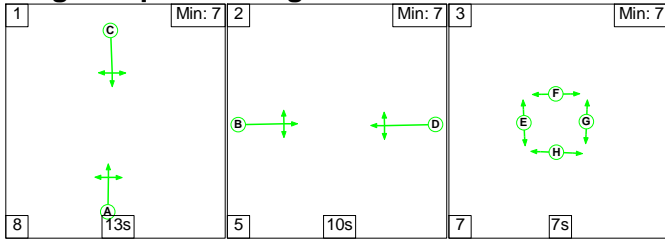
**Lane Saturation Flows**

<b>Junction: Unnamed Junction</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (Lambra Rd (E))	4.00	0.00	Y	Arm 5 Ahead	Inf	29.1 %	1823	1823
				Arm 7 Right	15.00	31.8 %		
				Arm 8 Left	8.00	39.1 %		
2/1 (Wesley Road)	3.50	0.00	Y	Arm 5 Left	10.00	38.8 %	1822	1822
				Arm 6 Right	15.00	20.5 %		
				Arm 7 Ahead	Inf	40.8 %		
3/1 (Lambra Rd (W))	3.65	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1980	1980
				Arm 7 Left	6.00	0.0 %		
3/2 (Lambra Rd (W))	3.25	0.00	Y	Arm 8 Right	12.00	100.0 %	1724	1724
4/1 (Service Road)	3.65	0.00	Y	Arm 5 Right	12.00	0.0 %	1657	1657
				Arm 6 Left	6.00	78.1 %		
				Arm 8 Ahead	Inf	21.9 %		
5/1 (Lambra Rd (W) exit Lane 1)				Infinite Saturation Flow			Inf	Inf
6/1 (lambra rd (e) exit Lane 1)				Infinite Saturation Flow			Inf	Inf
7/1 (service rd exit Lane 1)				Infinite Saturation Flow			Inf	Inf
8/1 (wesley rd exit Lane 1)				Infinite Saturation Flow			Inf	Inf

Full Input Data And Results

Scenario 1: '2020 PM' (FG1: '2020 PM base plus dev', Plan 1: 'with peds')

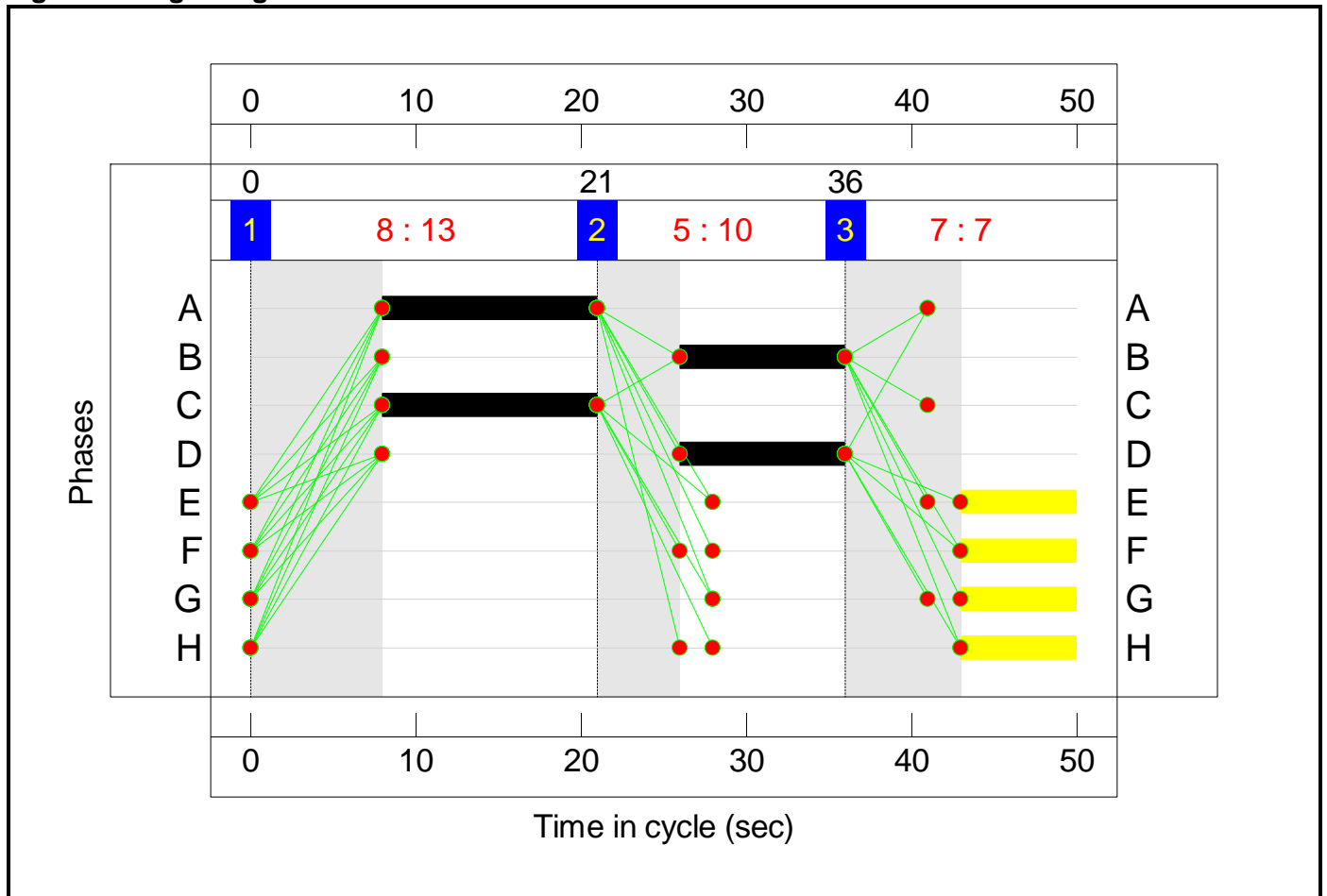
Stage Sequence Diagram



Stage Timings

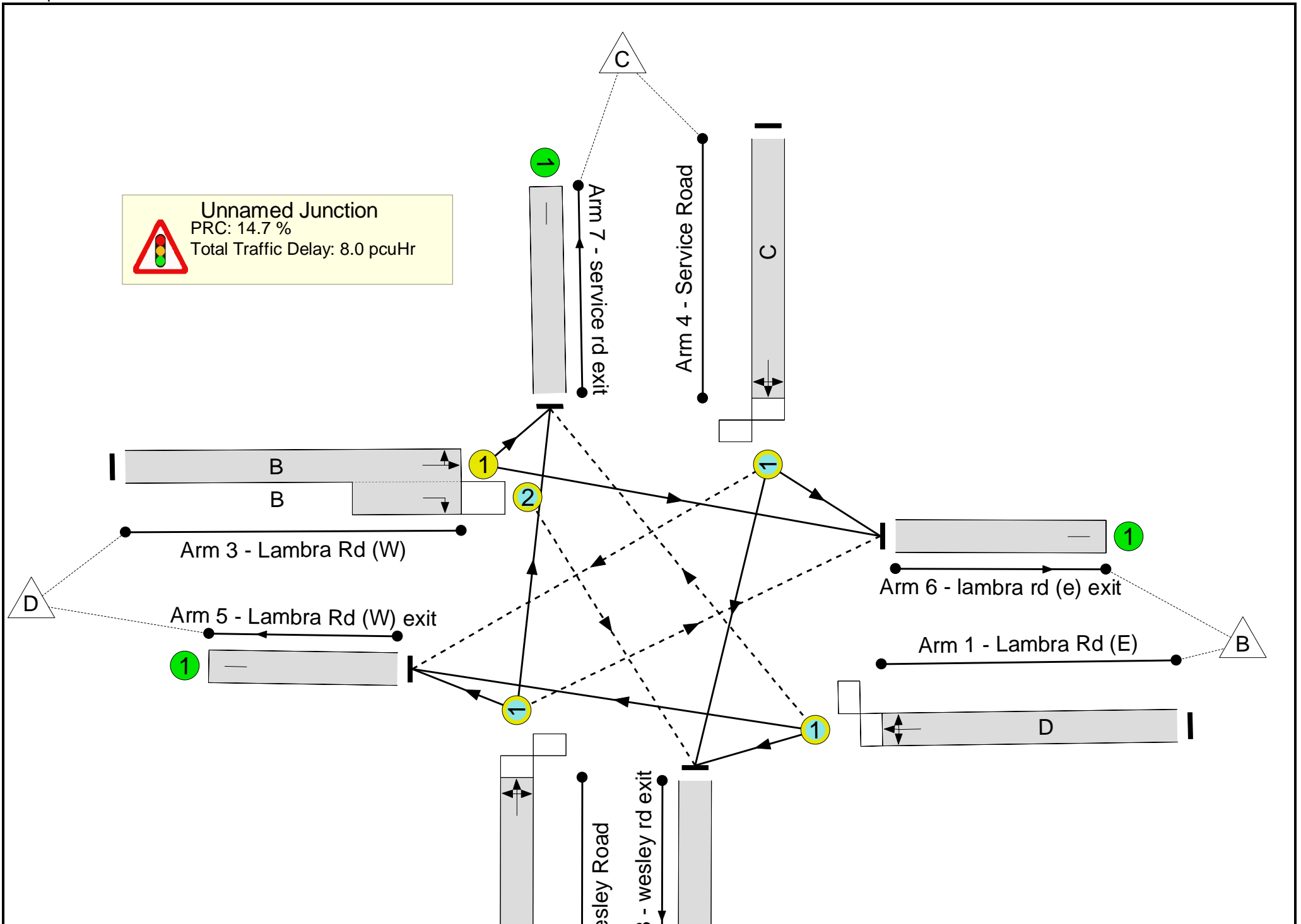
Stage	1	2	3
Duration	13	10	7
Change Point	0	21	36

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>78.4%</b>
<b>Unnamed Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>78.4%</b>
1/1	Lambra Rd (E) Ahead Right Left	O	N/A	N/A	D		1	10	-	227	1742	383	59.2%
2/1	Wesley Road Left Right Ahead	O	N/A	N/A	A		1	13	-	254	1766	423	60.1%
3/1+3/2	Lambra Rd (W) Ahead Left Right	U+O	N/A	N/A	B		1	10	-	296	1980:1724	176+201	78.4 : 78.4%
4/1	Service Road Right Left Ahead	O	N/A	N/A	C		1	13	-	158	1762	493	32.0%
5/1	Lambra Rd (W) exit	U	N/A	N/A	-		-	-	-	98	Inf	Inf	0.0%
6/1	lambra rd (e) exit	U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
7/1	service rd exit	U	N/A	N/A	-		-	-	-	31	Inf	Inf	0.0%
8/1	wesley rd exit	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%

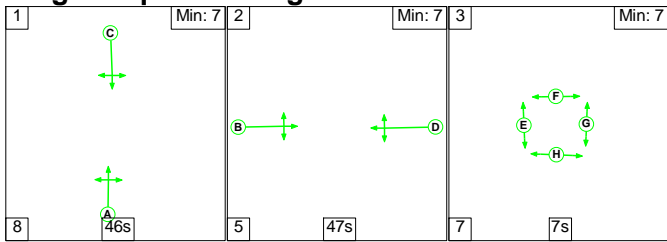
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	<b>329</b>	<b>0</b>	<b>31</b>	<b>4.2</b>	<b>3.4</b>	<b>0.3</b>	<b>8.0</b>	-	-	-	-
<b>Unnamed Junction</b>	-	-	<b>329</b>	<b>0</b>	<b>31</b>	<b>4.2</b>	<b>3.4</b>	<b>0.3</b>	<b>8.0</b>	-	-	-	-
1/1	227	227	25	0	1	1.1	0.7	0.0	1.8	29.1	2.8	0.7	3.5
2/1	254	254	172	0	4	1.1	0.7	0.1	1.9	27.6	3.1	0.7	3.8
3/1+3/2	296	296	131	0	27	1.4	1.7	0.2	3.3	40.3	1.8	1.7	3.6
4/1	158	158	0	0	0	0.6	0.2	0.0	0.9	19.6	1.7	0.2	1.9
5/1	98	98	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	31	31	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):		14.7	Total Delay for Signalled Lanes (pcuHr):			7.96	Cycle Time (s): 50			
			PRC Over All Lanes (%):		14.7	Total Delay Over All Lanes(pcuHr):			7.96				

Full Input Data And Results

Scenario 2: '2020 SAT' (FG2: '2020 SAT base plus dev', Plan 1: 'with peds')

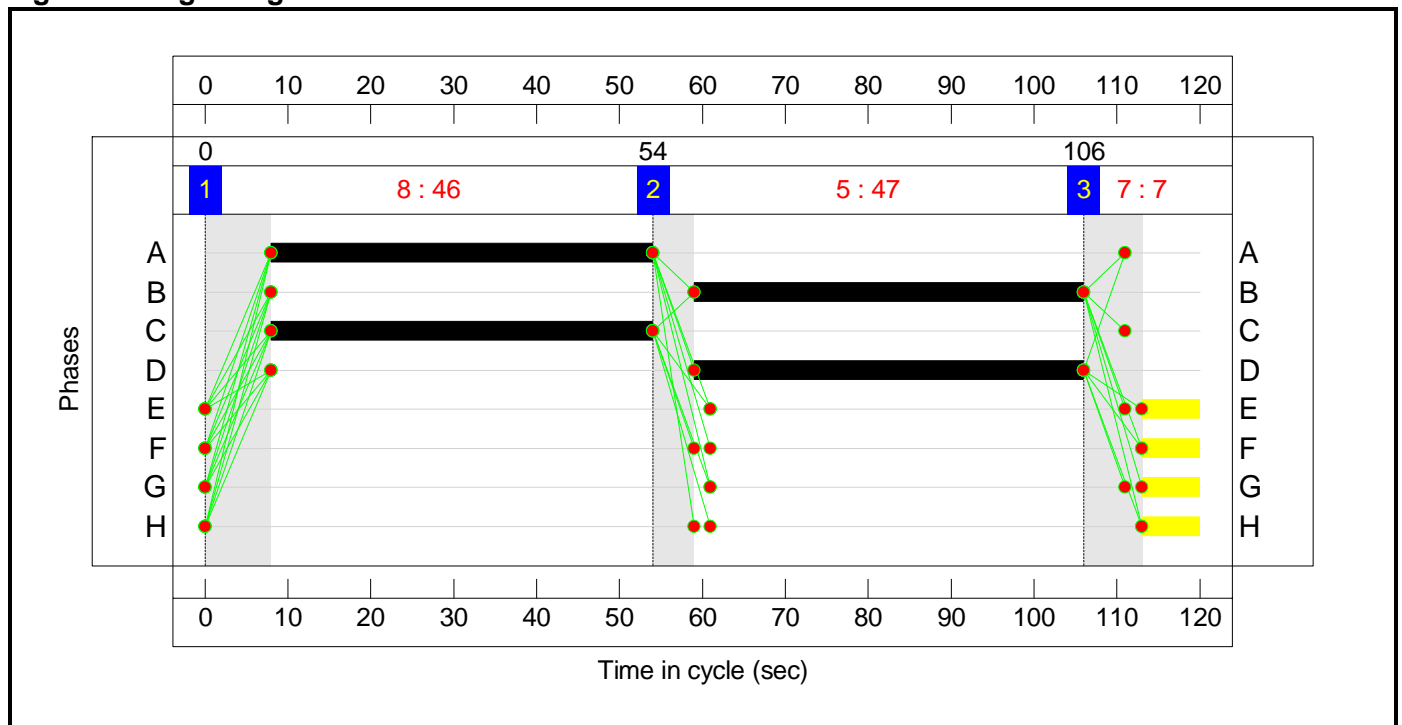
Stage Sequence Diagram



Stage Timings

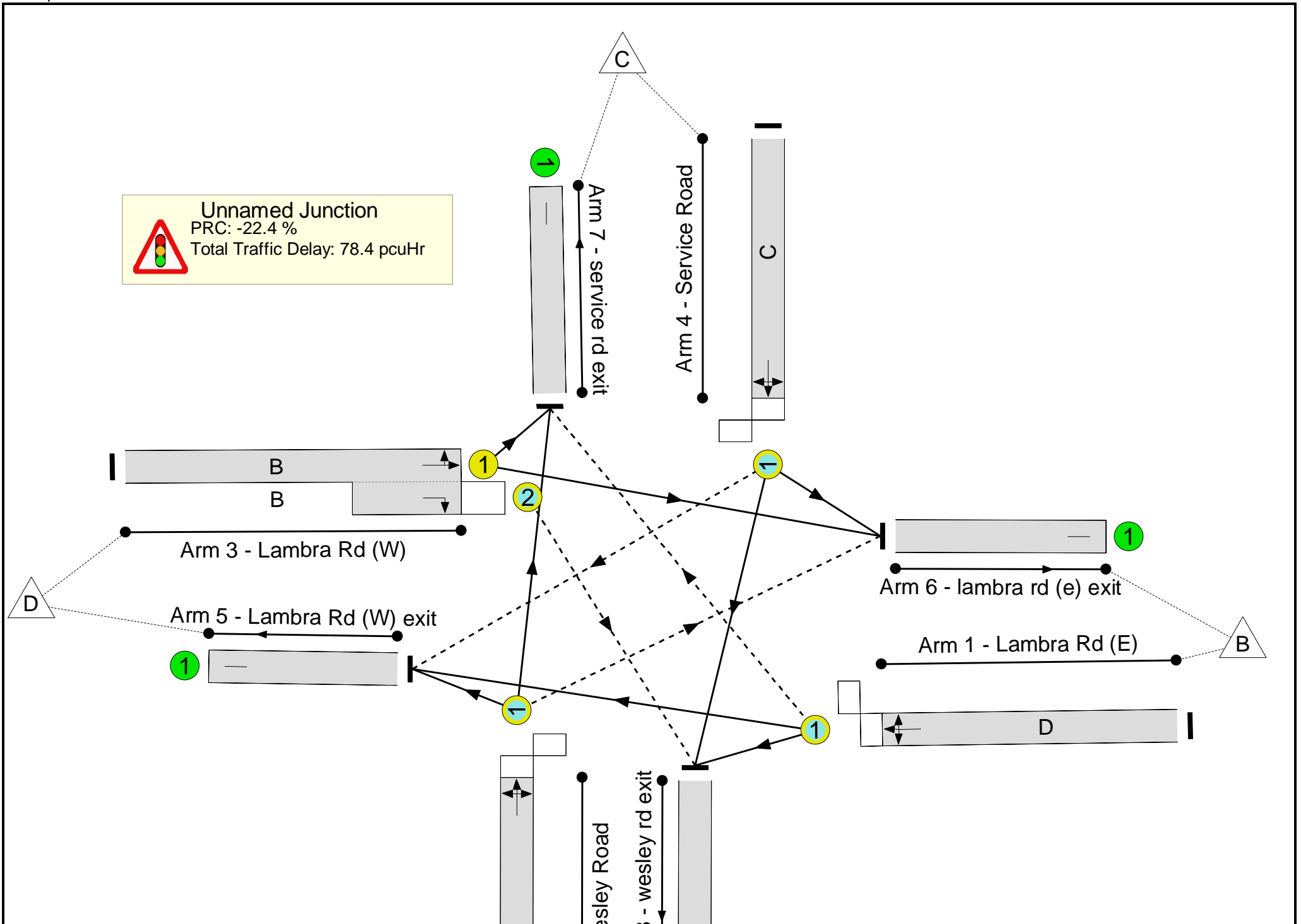
Stage	1	2	3
Duration	46	47	7
Change Point	0	54	106

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	110.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	110.2%
1/1	Lambra Rd (E) Ahead Right Left	O	N/A	N/A	D		1	47	-	358	1823	720	49.7%
2/1	Wesley Road Left Right Ahead	O	N/A	N/A	A		1	46	-	552	1822	501	110.2%
3/1+3/2	Lambra Rd (W) Ahead Left Right	U+O	N/A	N/A	B		1	47	-	593	1980:1724	203+352	106.7 : 106.7%
4/1	Service Road Right Left Ahead	O	N/A	N/A	C		1	46	-	406	1657	649	62.6%
5/1	Lambra Rd (W) exit	U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
6/1	lambra rd (e) exit	U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
7/1	service rd exit	U	N/A	N/A	-		-	-	-	339	Inf	Inf	0.0%
8/1	wesley rd exit	U	N/A	N/A	-		-	-	-	605	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	524	0	45	21.5	56.1	0.8	78.4	-	-	-	-
<b>Unnamed Junction</b>	-	-	524	0	45	21.5	56.1	0.8	78.4	-	-	-	-
1/1	358	358	113	0	1	2.7	0.5	0.0	3.2	32.3	9.0	0.5	9.4
2/1	552	501	99	0	3	8.6	30.1	0.2	38.8	253.1	20.1	30.1	50.2
3/1+3/2	593	569	312	0	40	6.9	24.7	0.6	32.2	195.7	16.8	24.7	41.5
4/1	406	406	0	0	0	3.3	0.8	0.0	4.1	36.8	10.8	0.8	11.7
5/1	298	298	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	637	637	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	318	318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	581	581	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -22.4  
 PRC Over All Lanes (%): -22.4

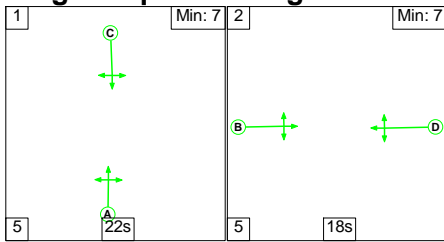
Total Delay for Signalled Lanes (pcuHr): 78.41  
 Total Delay Over All Lanes(pcuHr): 78.41

Cycle Time (s): 120

Full Input Data And Results

**Scenario 3: '2020 PM'** (FG1: '2020 PM base plus dev', Plan 2: 'no peds')

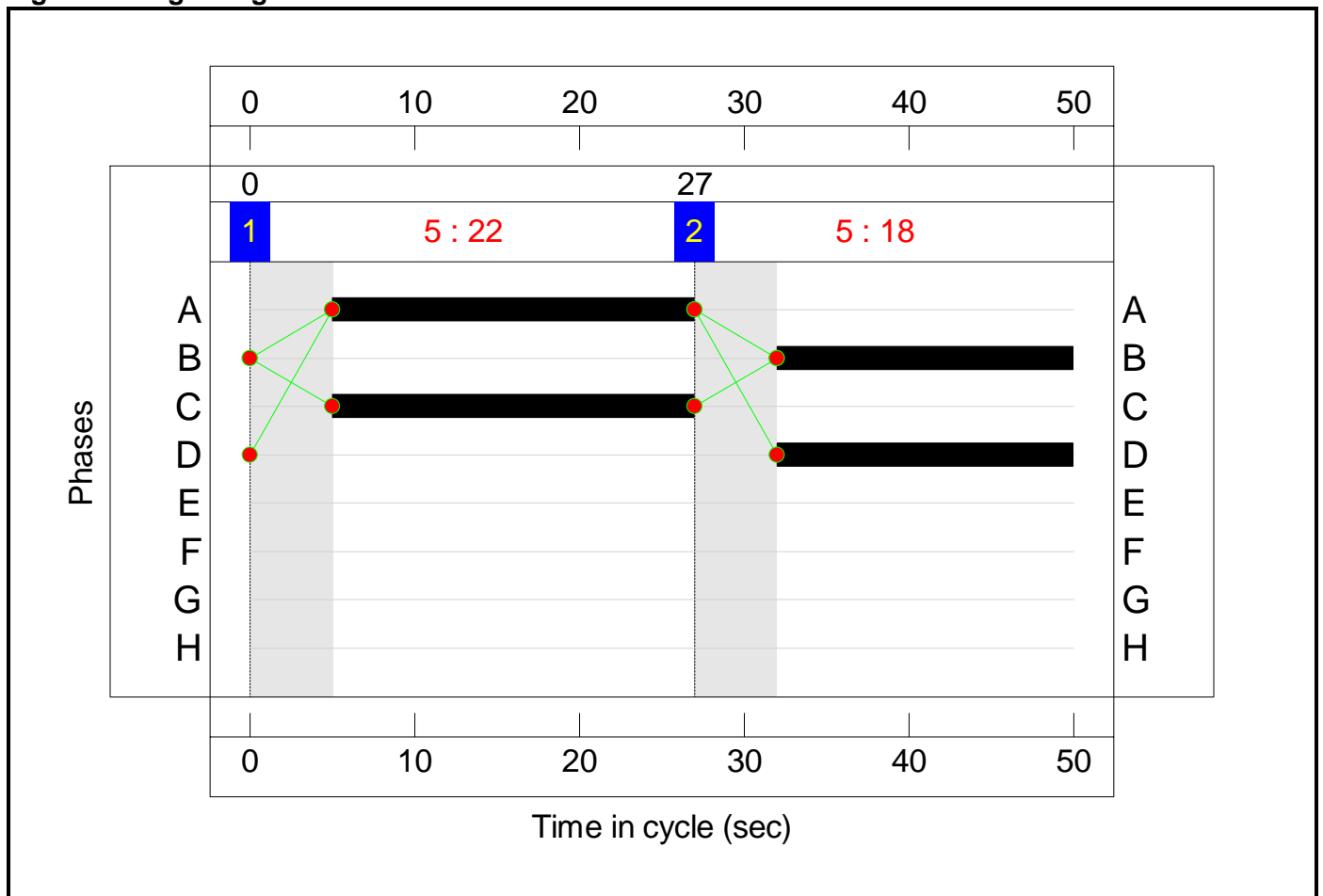
**Stage Sequence Diagram**



**Stage Timings**

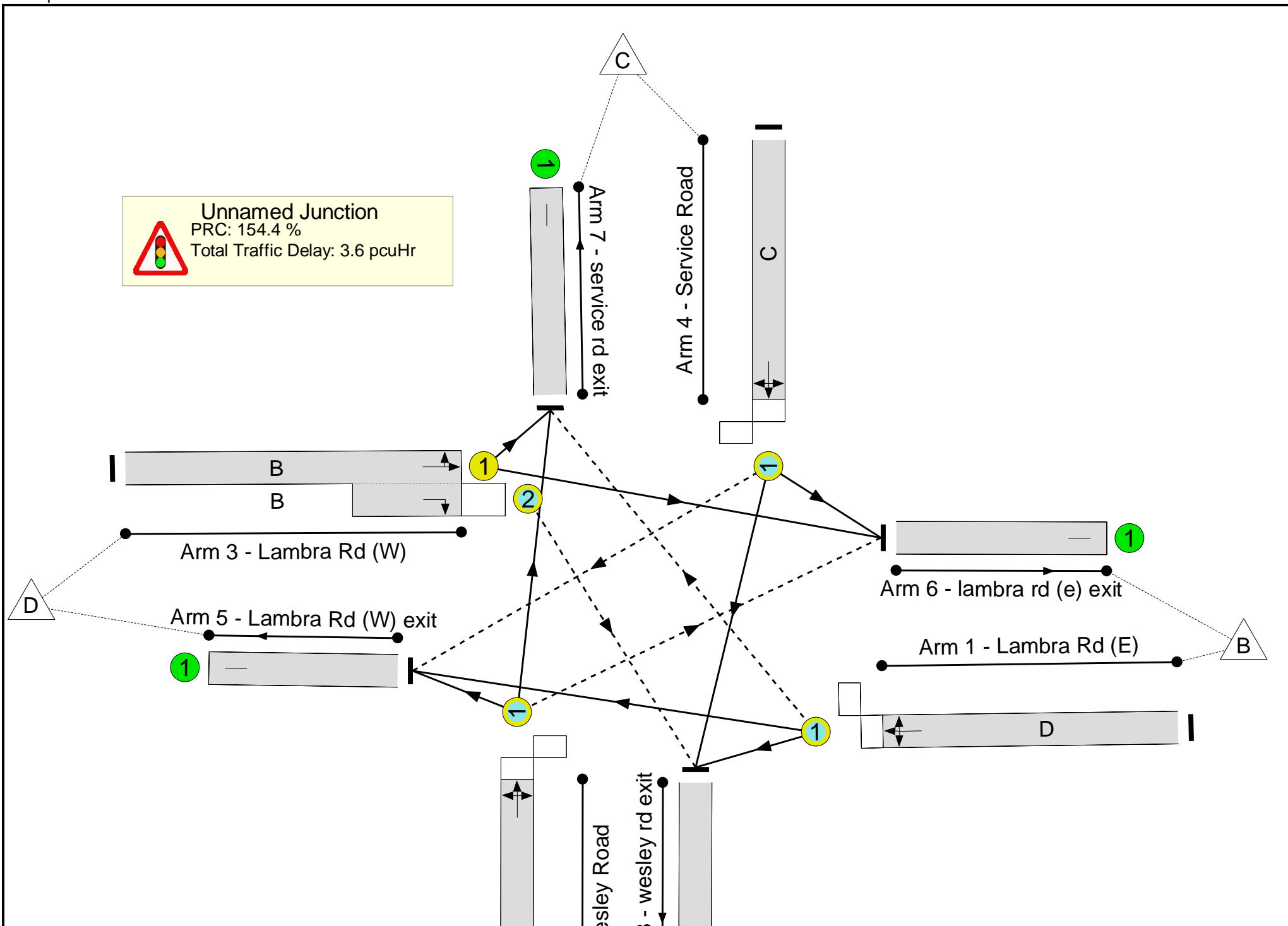
Stage	1	2
Duration	22	18
Change Point	0	27

**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results



Full Input Data And Results

**Network Results**

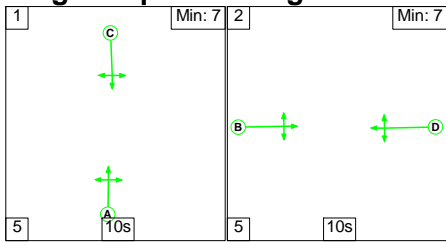
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>35.4%</b>
<b>Unnamed Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>35.4%</b>
1/1	Lambra Rd (E) Ahead Right Left	O	N/A	N/A	D		1	18	-	227	1742	662	34.3%
2/1	Wesley Road Left Right Ahead	O	N/A	N/A	A		1	22	-	254	1766	774	32.8%
3/1+3/2	Lambra Rd (W) Ahead Left Right	U+O	N/A	N/A	B		1	18	-	296	1980:1724	390+447	35.4 : 35.4%
4/1	Service Road Right Left Ahead	O	N/A	N/A	C		1	22	-	158	1762	811	19.5%
5/1	Lambra Rd (W) exit	U	N/A	N/A	-		-	-	-	98	Inf	Inf	0.0%
6/1	lambra rd (e) exit	U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
7/1	service rd exit	U	N/A	N/A	-		-	-	-	31	Inf	Inf	0.0%
8/1	wesley rd exit	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%



Full Input Data And Results

Scenario 4: '2020 SAT' (FG2: '2020 SAT base plus dev', Plan 2: 'no peds')

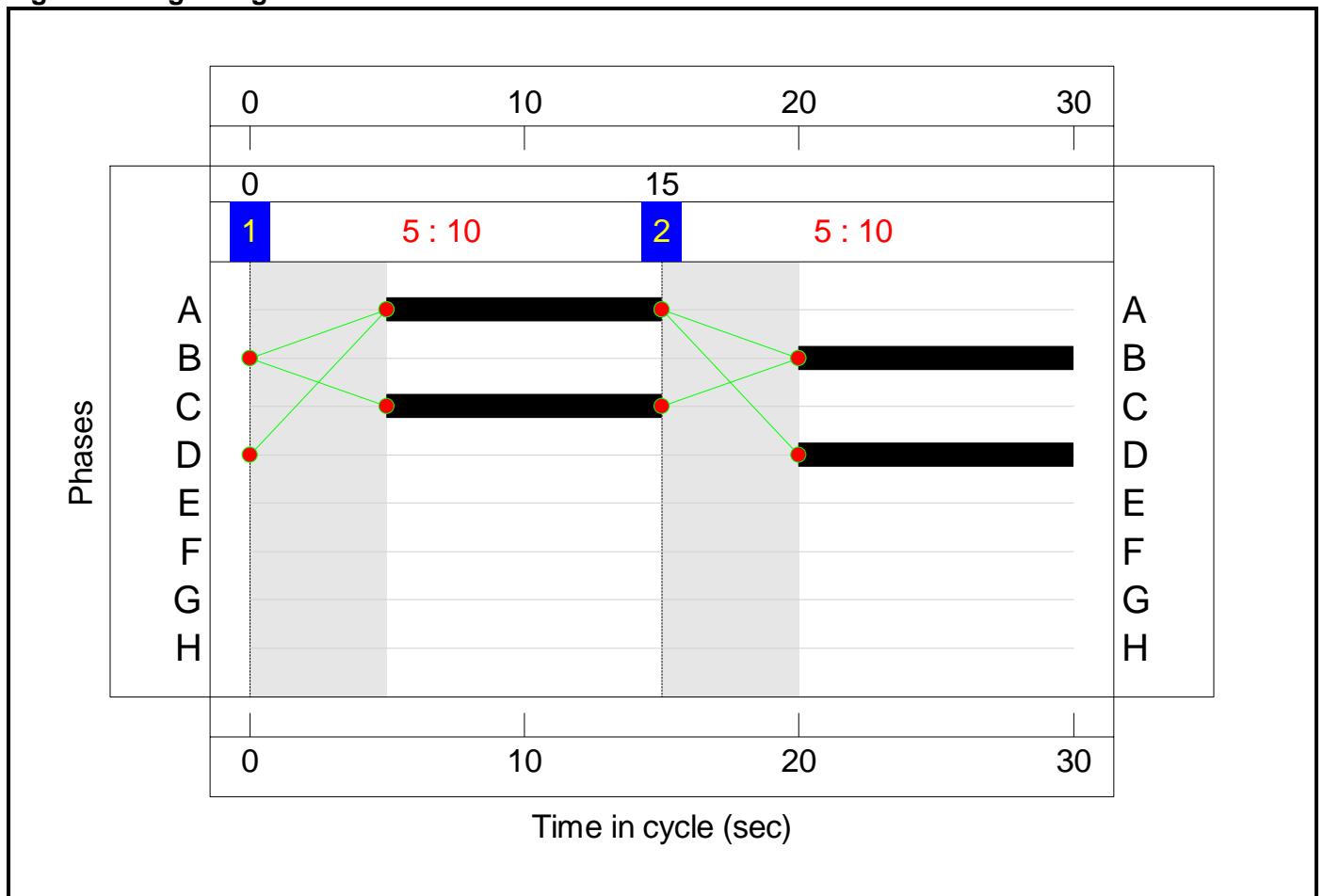
Stage Sequence Diagram



Stage Timings

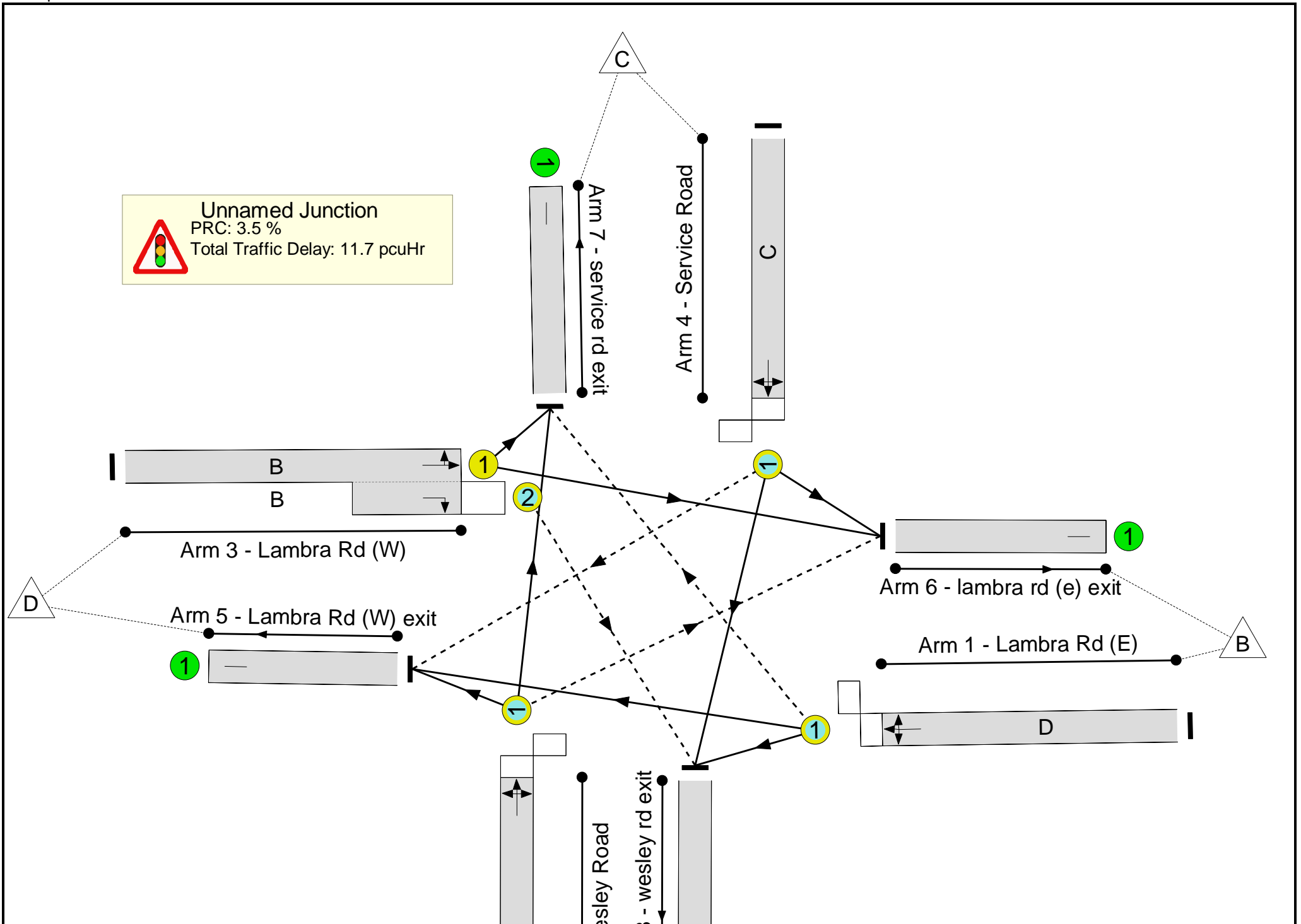
Stage	1	2
Duration	10	10
Change Point	0	15

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>87.0%</b>
<b>Unnamed Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>87.0%</b>
1/1	Lambra Rd (E) Ahead Right Left	O	N/A	N/A	D		1	10	-	358	1823	668	53.6%
2/1	Wesley Road Left Right Ahead	O	N/A	N/A	A		1	10	-	552	1822	668	82.6%
3/1+3/2	Lambra Rd (W) Ahead Left Right	U+O	N/A	N/A	B		1	10	-	593	1980:1724	249+432	87.0 : 87.0%
4/1	Service Road Right Left Ahead	O	N/A	N/A	C		1	10	-	406	1657	608	66.8%
5/1	Lambra Rd (W) exit	U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
6/1	lambra rd (e) exit	U	N/A	N/A	-		-	-	-	647	Inf	Inf	0.0%
7/1	service rd exit	U	N/A	N/A	-		-	-	-	339	Inf	Inf	0.0%
8/1	wesley rd exit	U	N/A	N/A	-		-	-	-	605	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	490	0	113	4.2	7.0	0.6	11.7	-	-	-	-
<b>Unnamed Junction</b>	-	-	490	0	113	4.2	7.0	0.6	11.7	-	-	-	-
1/1	358	358	110	0	4	0.7	0.6	0.0	1.4	13.6	2.3	0.6	2.9
2/1	552	552	109	0	4	1.3	2.3	0.1	3.7	24.0	4.1	2.3	6.4
3/1+3/2	593	593	271	0	105	1.2	3.1	0.4	4.8	29.1	2.8	3.1	5.9
4/1	406	406	0	0	0	0.9	1.0	0.0	1.9	16.8	2.8	1.0	3.8
5/1	318	318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	647	647	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	339	339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	605	605	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
<p>C1                      PRC for Signalled Lanes (%):    3.5                      Total Delay for Signalled Lanes (pcuHr):    11.74                      Cycle Time (s):    30</p> <p>                                 PRC Over All Lanes (%):    3.5                      Total Delay Over All Lanes(pcuHr):    11.74</p>													

Capabilities on project:  
Transportation

## **Appendix E4: LAMBRA ROAD / PONTEFRACT ROAD PICADY Outputs**

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 08:13:16 on Wednesday, 17 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	( W ) 8.50 M.	I
I	CENTRAL RESERVE WIDTH	I	( WCR ) 0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	( WC-B ) 2.20 M.	I
I	- VISIBILITY	I	( VC-B ) 150.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I	( VB-C ) 30.0 M.	I
I	- VISIBILITY TO RIGHT	I	( VB-A ) 200.0 M.	I
I	- LANE 1 WIDTH	I	( WB-C ) 5.00 M.	I
I	- LANE 2 WIDTH	I	( WB-A ) 0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	899.99		0.31		0.12	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	702.90		0.29		0.11		0.18		0.41	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	660.83		0.23		0.23	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	ARM	I	FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER	I	I
I	I	I	TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK	I	I
I	I	I	I	I	I
I	ARM A	I	15.00 I 45.00 I 75.00	I	7.34 I 11.01 I 7.34
I	ARM B	I	15.00 I 45.00 I 75.00	I	3.67 I 5.51 I 3.67
I	ARM C	I	15.00 I 45.00 I 75.00	I	6.38 I 9.56 I 6.38



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	4.40	7.86	0.560		2.97	1.33	22.0		0.31
C-A	7.51								
C-B	0.13	8.01	0.017		0.02	0.02	0.3		0.13
A-B	2.64								
A-C	6.16								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	3.69	8.42	0.438		1.33	0.80	12.7		0.21
C-A	6.29								
C-B	0.11	8.33	0.014		0.02	0.01	0.2		0.12
A-B	2.21								
A-C	5.16								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	2.8	***
17.45	3.0	***
18.00	1.3	*
18.15	0.8	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY *	* QUEUEING * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY *	* INCLUSIVE QUEUEING * (MIN/VEH)
B-AC	404.7	269.8	142.4	0.35	142.5	0.35
C-A	689.6	459.7				
C-B	12.4	8.3	1.6	0.13	1.6	0.13
A-B	242.3	161.5				
A-C	565.7	377.1				
ALL	1914.6	1276.4	144.0	0.08	144.0	0.08

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

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"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:40:42 on Friday, 19 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	50.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	50.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65		0.27		0.11	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33		0.26		0.10		0.16		0.36	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29		0.21		0.21	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Base + Dev Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I		I		I		I		I		I		I		I
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.55	I	11.33	I	7.55	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.89	I	5.83	I	3.89	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.38	I	9.56	I	6.38	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.66	6.84	0.681		7.97	2.34	48.5		0.64	I
I	C-A	7.51									I
I	C-B	0.13	7.46	0.018		0.02	0.02	0.3		0.14	I
I	A-B	2.64									I
I	A-C	6.41									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.90	7.35	0.531		2.34	1.18	19.2		0.30	I
I	C-A	6.29									I
I	C-B	0.11	7.78	0.015		0.02	0.01	0.2		0.13	I
I	A-B	2.21									I
I	A-C	5.37									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.0	**
17.30	6.4	*****
17.45	8.0	*****
18.00	2.3	**
18.15	1.2	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	428.1	290.8	0.68
C-A	689.6		
C-B	12.4	1.7	0.14
A-B	242.3		
A-C	589.1	392.7	
ALL	1961.4	292.5	0.15

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM A-B
786.65	0.27	0.11

Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
622.33	0.26	0.10	0.16	0.36

Intercept	Slope For Opposing	Slope For Opposing
STREAM C-B	STREAM A-C	STREAM A-B
620.29	0.21	0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2020 Base + Dev Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.52	14.29	9.52
ARM B	15.00	45.00	75.00	6.99	10.48	6.99
ARM C	15.00	45.00	75.00	4.78	7.16	4.78



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-AC	8.38	6.86	1.220		154.69	177.37	2490.4		23.73
C-A	5.36								
C-B	0.36	6.95	0.052		0.07	0.06	0.8		0.15
A-B	4.75								
A-C	6.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-AC	7.01	7.38	0.951		177.37	172.57	2624.6		23.84
C-A	4.49								
C-B	0.30	7.35	0.041		0.06	0.04	0.7		0.14
A-B	3.98								
A-C	5.58								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	7.5
12.15	31.4
12.30	93.1
12.45	154.7
13.00	177.4
13.15	172.6

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	DEMAND (VEH/H)	* QUEUEING * DELAY (MIN)	* INCLUSIVE QUEUEING * DELAY (MIN/VEH)
B-AC	769.4	512.9	8281.4	10.76
C-A	492.8	328.5		
C-B	33.0	22.0	5.1	0.15
A-B	436.3	290.9		
A-C	612.5	408.3		
ALL	2344.1	1562.7	8286.5	3.54

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT  
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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:39:26 on Friday, 19 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	50.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	50.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65	0.27		0.11		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33	0.26		0.10		0.16		0.36		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29	0.21		0.21		I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I	ARM	I	FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER	I	BEFORE I AT TOP I AFTER	I
I	I	I	TO RISE I IS REACHED I FALLING	I	PEAK I OF PEAK I PEAK	I
I	I	I	I	I	I	I
I	ARM A	I	15.00 I 45.00 I 75.00	I	7.34 I 11.01 I 7.34	I
I	ARM B	I	15.00 I 45.00 I 75.00	I	3.67 I 5.51 I 3.67	I
I	ARM C	I	15.00 I 45.00 I 75.00	I	6.38 I 9.56 I 6.38	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.40	6.95	0.634		5.10	1.85	33.4		0.46	I
I	C-A	7.51									I
I	C-B	0.13	7.51	0.018		0.02	0.02	0.3		0.14	I
I	A-B	2.64									I
I	A-C	6.16									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.69	7.44	0.496		1.85	1.02	16.4		0.27	I
I	C-A	6.29									I
I	C-B	0.11	7.82	0.014		0.02	0.01	0.2		0.13	I
I	A-B	2.21									I
I	A-C	5.16									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.6	**
17.30	4.5	****
17.45	5.1	*****
18.00	1.9	**
18.15	1.0	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	404.7	211.8	0.52
C-A	689.6		
C-B	12.4	1.7	0.14
A-B	242.3		
A-C	565.7	377.1	
ALL	1914.6	213.5	0.11

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM A-B
786.65	0.27	0.11

Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
622.33	0.26	0.10	0.16	0.36

Intercept	Slope For Opposing	Slope For Opposing
STREAM C-B	STREAM A-C	STREAM A-B
620.29	0.21	0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2020 Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.71	13.07	8.71
ARM B	15.00	45.00	75.00	5.51	8.27	5.51
ARM C	15.00	45.00	75.00	4.78	7.16	4.78



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-AC	6.61	7.20	0.918		54.93	48.01	772.1		7.19
C-A	5.36								
C-B	0.36	7.16	0.050		0.07	0.05	0.8		0.15
A-B	4.06								
A-C	6.38								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-AC	5.53	7.68	0.720		48.01	18.16	496.3		4.50
C-A	4.49								
C-B	0.30	7.53	0.040		0.05	0.04	0.6		0.14
A-B	3.40								
A-C	5.35								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	2.3 **
12.15	6.4 *****
12.30	31.2 *****
12.45	54.9 *****
13.00	48.0 *****
13.15	18.2 *****

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	DEMAND (VEH/H)	* QUEUEING * DELAY (MIN)	(MIN/VEH)	* INCLUSIVE QUEUEING * DELAY (MIN)	(MIN/VEH)
B-AC	607.0	404.7	2303.7	3.80	2325.2	3.83
C-A	492.8	328.5				
C-B	33.0	22.0	4.9	0.15	4.9	0.15
A-B	373.0	248.7				
A-C	586.4	390.9				
ALL	2092.2	1394.8	2308.6	1.10	2330.1	1.11

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
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 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====



-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	50.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	50.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65		0.27		0.11	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33		0.26		0.10		0.16		0.36	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29		0.21		0.21	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2020 Base + Dev Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I		I		I		I		I		I		I		I
I	ARM A	I	15.00	I	45.00	I	75.00	I	7.55	I	11.33	I	7.55	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.89	I	5.83	I	3.89	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	6.38	I	9.56	I	6.38	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.66	6.84	0.681		7.97	2.34	48.5		0.64	I
I	C-A	7.51									I
I	C-B	0.13	7.46	0.018		0.02	0.02	0.3		0.14	I
I	A-B	2.64									I
I	A-C	6.41									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.90	7.35	0.531		2.34	1.18	19.2		0.30	I
I	C-A	6.29									I
I	C-B	0.11	7.78	0.015		0.02	0.01	0.2		0.13	I
I	A-B	2.21									I
I	A-C	5.37									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.0	**
17.30	6.4	*****
17.45	8.0	*****
18.00	2.3	**
18.15	1.2	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	428.1	285.4	290.8
C-A	689.6	459.7	
C-B	12.4	8.3	1.7
A-B	242.3	161.5	
A-C	589.1	392.7	
ALL	1961.4	1307.6	292.5

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept	Slope For Opposing	Slope For Opposing
STREAM B-C	STREAM A-C	STREAM A-B
786.65	0.27	0.11

Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For Opposing
STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
622.33	0.26	0.10	0.16	0.36

Intercept	Slope For Opposing	Slope For Opposing
STREAM C-B	STREAM A-C	STREAM A-B
620.29	0.21	0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2020 Base + Dev Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.  
 LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.52	14.29	9.52
ARM B	15.00	45.00	75.00	6.99	10.48	6.99
ARM C	15.00	45.00	75.00	4.78	7.16	4.78



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-AC	8.38	6.86	1.220		154.69	177.37	2490.4		23.73
C-A	5.36								
C-B	0.36	6.95	0.052		0.07	0.06	0.8		0.15
A-B	4.75								
A-C	6.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-AC	7.01	7.38	0.951		177.37	172.57	2624.6		23.84
C-A	4.49								
C-B	0.30	7.35	0.041		0.06	0.04	0.7		0.14
A-B	3.98								
A-C	5.58								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	7.5
12.15	31.4
12.30	93.1
12.45	154.7
13.00	177.4
13.15	172.6

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.1
12.30	0.1
12.45	0.1
13.00	0.1
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	DEMAND (VEH/H)	* QUEUEING * DELAY (MIN)	* INCLUSIVE QUEUEING * DELAY (MIN/VEH)
B-AC	769.4	512.9	8281.4	10.76
C-A	492.8	328.5		
C-B	33.0	22.0	5.1	0.15
A-B	436.3	290.9		
A-C	612.5	408.3		
ALL	2344.1	1562.7	8286.5	3.54

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
RELEASE 5.0 (JUNE 2010)

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EMAIL: software@trl.co.uk  
-----

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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:40:13 on Friday, 19 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I	( W ) 8.50 M.	I
I	CENTRAL RESERVE WIDTH	I	( WCR ) 0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I	( WC-B ) 2.20 M.	I
I	- VISIBILITY	I	( VC-B ) 80.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I	( VB-C ) 50.0 M.	I
I	- VISIBILITY TO RIGHT	I	( VB-A ) 50.0 M.	I
I	- LANE 1 WIDTH	I	( WB-C ) 5.00 M.	I
I	- LANE 2 WIDTH	I	( WB-A ) 0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	786.65	0.27		0.11		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	622.33	0.26		0.10		0.16		0.36		I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	620.29	0.21		0.21		I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2015 Base Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	6.84	I	10.26	I	6.84	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.41	I	5.12	I	3.41	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	5.94	I	8.91	I	5.94	I



I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	17.45-18.00										I
I	B-AC	4.09	7.16	0.572		3.06	1.40	23.3		0.35	I
I	C-A	7.00									I
I	C-B	0.12	7.64	0.016		0.02	0.02	0.2		0.13	I
I	A-B	2.46									I
I	A-C	5.74									I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	18.00-18.15										I
I	B-AC	3.43	7.61	0.450		1.40	0.84	13.4		0.24	I
I	C-A	5.86									I
I	C-B	0.10	7.93	0.013		0.02	0.01	0.2		0.13	I
I	A-B	2.06									I
I	A-C	4.81									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.3	*
17.30	2.9	***
17.45	3.1	***
18.00	1.4	*
18.15	0.8	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY	* INCLUSIVE QUEUEING * DELAY
(VEH)	(VEH/H)	(MIN)	(MIN/VEH)
B-AC	375.8	147.2	0.39
C-A	642.8		
C-B	11.0	1.5	0.13
A-B	225.7		
A-C	527.2		
ALL	1782.5	148.7	0.08

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Stream	Intercept	Slope For Opposing
B-C	STREAM A-C	STREAM A-B
B-C	786.65	0.27
A-B		0.11

Stream	Intercept	Slope For Opposing	Slope For Opposing	Slope For Opposing
B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B
B-A	622.33	0.26	0.10	0.16
C-B				0.36

Stream	Intercept	Slope For Opposing
C-B	STREAM A-C	STREAM A-B
C-B	620.29	0.21
A-B		0.21

(NB These values do not allow for any site specific corrections)

TRAFFIC DEMAND DATA

ARM	FLOW SCALE (%)
A	100
B	100
C	100

Demand set: 2015 Saturday Peak

TIME PERIOD BEGINS 11.45 AND ENDS 13.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
A	15.00	45.00	75.00	8.10	12.15
B	15.00	45.00	75.00	5.14	7.71
C	15.00	45.00	75.00	4.44	6.66



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
12.45-13.00									
B-AC	6.16	7.41	0.831		30.95	15.70	349.9		3.34
C-A	4.99								
C-B	0.33	7.32	0.045		0.06	0.05	0.7		0.14
A-B	3.78								
A-C	5.93								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
13.00-13.15									
B-AC	5.16	7.85	0.657		15.70	2.09	74.8		0.78
C-A	4.18								
C-B	0.28	7.66	0.036		0.05	0.04	0.6		0.14
A-B	3.16								
A-C	4.97								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	1.8 **
12.15	4.0 ****
12.30	18.6 *****
12.45	31.0 *****
13.00	15.7 *****
13.15	2.1 **

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
12.00	0.0
12.15	0.0
12.30	0.1
12.45	0.1
13.00	0.0
13.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL CAPACITY (VEH/H)	* QUEUEING * * DELAY * (MIN)	* INCLUSIVE QUEUEING * * DELAY * (MIN)
B-AC	565.7	377.1	1048.0	1.85
C-A	458.3	305.6		
C-B	30.3	20.2	4.4	0.14
A-B	346.9	231.2		
A-C	545.1	363.4		
ALL	1946.3	1297.5	1052.3	0.54

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM  
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Run with file:-  
"F:\PROJECTS\Development - BMBC Town Centre TA\03 EXECUTION\Modelling\PICADY\Lambra Ponte Priority.vpi"  
(drive-on-the-left) at 10:34:45 on Tuesday, 16 June 2015

RUN INFORMATION  
\*\*\*\*\*

RUN TITLE : Pontefract Road/Lamborough Road  
LOCATION : Barnsley  
DATE : 29/05/15  
CLIENT :  
ENUMERATOR : SmithsonN [UKLDS2PC32028]  
JOB NUMBER :  
STATUS :  
DESCRIPTION :

MAJOR/MINOR JUNCTION CAPACITY AND DELAY  
\*\*\*\*\*

INPUT DATA  
-----

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)  
I  
I  
I  
I  
I  
I  
I  
MINOR ROAD (ARM B)

ARM A IS Arm A  
ARM B IS Arm B  
ARM C IS Arm C

STREAM LABELLING CONVENTION  
-----

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B  
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C  
ETC.

-----  
 GEOMETRIC DATA  
 -----

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I ( W )	8.50 M.	I
I	CENTRAL RESERVE WIDTH	I ( WCR )	0.00 M.	I
I	MAJOR ROAD RIGHT TURN - WIDTH	I ( WC-B )	2.20 M.	I
I	- VISIBILITY	I ( VC-B )	150.00 M.	I
I	- BLOCKS TRAFFIC ( SPACES )	I	NO ( 0 )	I
I	MINOR ROAD - VISIBILITY TO LEFT	I ( VB-C )	30.0 M.	I
I	- VISIBILITY TO RIGHT	I ( VB-A )	200.0 M.	I
I	- LANE 1 WIDTH	I ( WB-C )	5.00 M.	I
I	- LANE 2 WIDTH	I ( WB-A )	0.00 M.	I

-----  
 .SLOPES AND INTERCEPT  
 -----

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-C	STREAM	A-C	STREAM	A-B	I
I	899.99		0.31		0.12	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	Slope For	Opposing	I
I	STREAM B-A	STREAM	A-C	STREAM	A-B	STREAM	C-A	STREAM	C-B	I
I	702.90		0.29		0.11		0.18		0.41	I

I	Intercept For	Slope For	Opposing	Slope For	Opposing	I
I	STREAM C-B	STREAM	A-C	STREAM	A-B	I
I	660.83		0.23		0.23	I

(NB These values do not allow for any site specific corrections)

-----  
 TRAFFIC DEMAND DATA  
 -----

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 2015 Base Weekday PM

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN.

LENGTH OF TIME SEGMENT - 15 MIN.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I								
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	6.84	I	10.26	I	6.84	I
I	ARM B	I	15.00	I	45.00	I	75.00	I	3.41	I	5.12	I	3.41	I
I	ARM C	I	15.00	I	45.00	I	75.00	I	5.94	I	8.91	I	5.94	I



TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
B-AC	4.09	8.10	0.505		2.03	1.05	16.9		0.26
C-A	7.00								
C-B	0.12	8.14	0.015		0.02	0.02	0.2		0.12
A-B	2.46								
A-C	5.74								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
B-AC	3.43	8.62	0.397		1.05	0.67	10.6		0.19
C-A	5.86								
C-B	0.10	8.45	0.012		0.02	0.01	0.2		0.12
A-B	2.06								
A-C	4.81								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.6 *
17.15	1.0 *
17.30	2.0 **
17.45	2.0 **
18.00	1.1 *
18.15	0.7 *

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * * DELAY *	* QUEUEING * (MIN/VEH)	* INCLUSIVE QUEUEING * * DELAY *	* INCLUSIVE QUEUEING * (MIN/VEH)
B-AC	375.8	250.5	107.3	0.29	107.3	0.29
C-A	642.8	428.5				
C-B	11.0	7.3	1.4	0.13	1.4	0.13
A-B	225.7	150.5				
A-C	527.2	351.4				
ALL	1782.5	1188.3	108.7	0.06	108.7	0.06

\* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD  
 \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES  
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD  
 \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS  
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*END OF RUN\*\*\*\*\*

==== end of file =====

Capabilities on project:  
Transportation

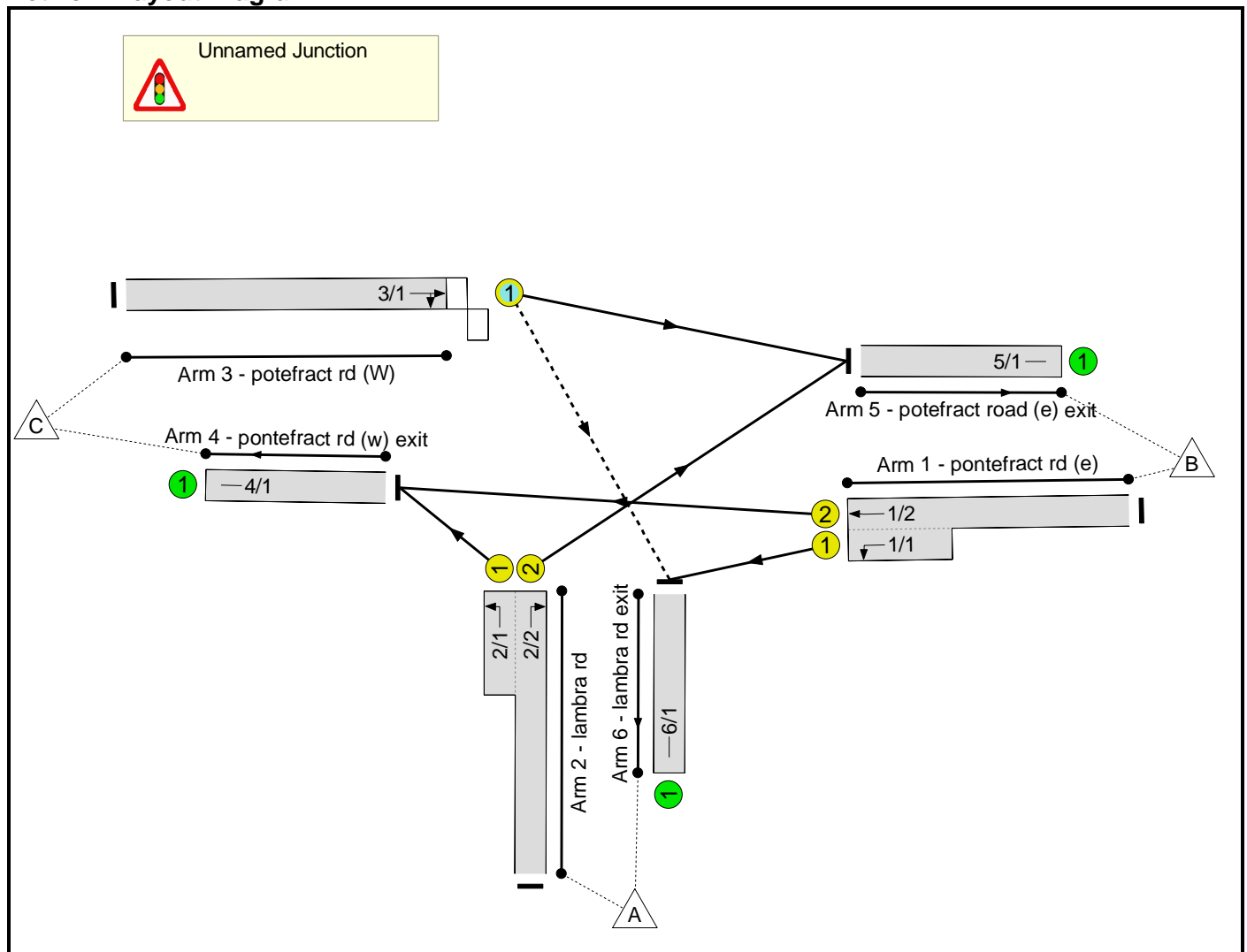
## **Appendix E5: LAMBRA ROAD / PONTEFRACT ROAD LINSIG Outputs**

Full Input Data And Results  
**Full Input Data And Results**

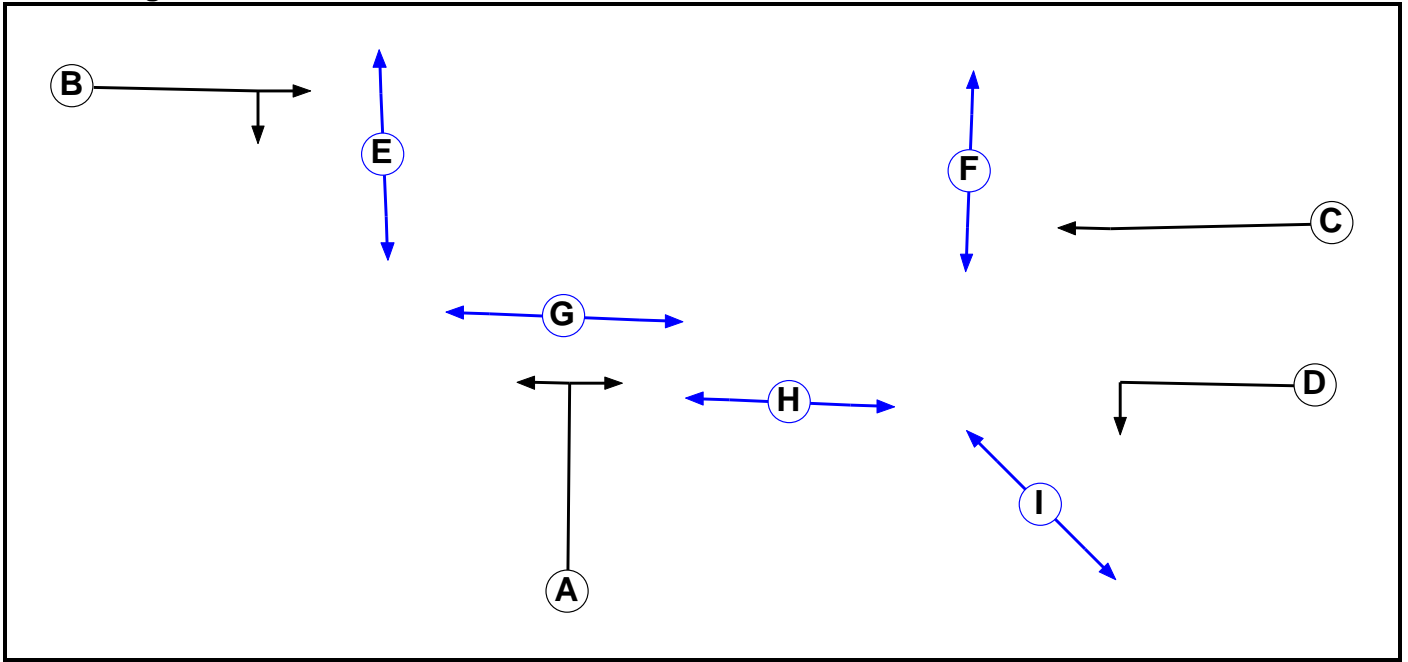
**User and Project Details**

Project:	
Title:	
Location:	
File name:	Pontefract Road - Mittigation.lsg3x
Author:	
Company:	
Address:	
Notes:	

**Network Layout Diagram**



**Phase Diagram**



**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		7	7
F	Pedestrian		7	7
G	Pedestrian		7	7
H	Pedestrian		7	7
I	Pedestrian		7	7

Full Input Data And Results

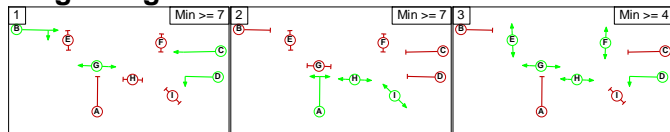
**Phase Intergrens Matrix**

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		5	5	-	7	7	5	-	-
	B	5		-	-	5	7	-	7	-
	C	5	-		-	7	5	-	-	-
	D	-	-	-		-	-	-	-	5
	E	10	10	10	-		-	-	-	-
	F	10	10	10	-	-		-	-	-
	G	10	-	-	-	-	-		-	-
	H	-	10	-	-	-	-	-		-
	I	-	-	-	10	-	-	-	-	

**Phases in Stage**

Stage No.	Phases in Stage
1	B C D G
2	A H I
3	D E F G H

**Stage Diagram**



**Phase Delays**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

**Prohibited Stage Change**

		To Stage		
		1	2	3
From Stage	1		10	7
	2	10		10
	3	10	10	

Full Input Data And Results

**Give-Way Lane Input Data**

Junction: Unnamed Junction											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
3/1 (potefract rd (W))	6/1 (Right)	1439	0	1/1	1.09	All	2.00	1.00	0.50	2	2.00
				1/2	1.09	All					

Full Input Data And Results

**Lane Input Data**

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (pontefract rd (e))	U	D	2	3	5.0	Geom	-	3.65	0.00	Y	Arm 6 Left	50.00
1/2 (pontefract rd (e))	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Ahead	Inf
2/1 (lambra rd)	U	A	2	3	5.0	Geom	-	3.65	0.00	Y	Arm 4 Left	10.00
2/2 (lambra rd)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Right	15.00
3/1 (potefract rd (W))	O	B	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 5 Ahead Arm 6 Right	Inf 12.00
4/1 (pontefract rd (w) exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (potefract road (e) exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (lambra rd exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2020 PM base plus dev'	08:00	09:00	01:00	
2: '2020 SAT base plus dev'	08:00	09:00	01:00	

**Scenario 1: '2020 PM'** (FG1: '2020 PM base plus dev', Plan 1: 'with peds')

**Traffic Flows, Desired**

**Desired Flow :**

Origin	Destination			
	A	B	C	Tot.
A	0	282	71	353
B	192	0	428	620
C	9	501	0	510
Tot.	201	783	499	1483

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 1: 2020 PM
<b>Junction: Unnamed Junction</b>	
1/1 (short)	192
1/2 (with short)	620(In) 428(Out)
2/1 (short)	71
2/2 (with short)	353(In) 282(Out)
3/1	510
4/1	499
5/1	783
6/1	201

**Lane Saturation Flows**

<b>Junction: Unnamed Junction</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (pontefract rd (e))	3.65	0.00	Y	Arm 6 Left	50.00	100.0 %	1922	1922
1/2 (pontefract rd (e))	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
2/1 (lambra rd)	3.65	0.00	Y	Arm 4 Left	10.00	100.0 %	1722	1722
2/2 (lambra rd)	3.65	0.00	Y	Arm 5 Right	15.00	100.0 %	1800	1800
3/1 (potefracr rd (W))	3.65	0.00	Y	Arm 5 Ahead Arm 6 Right	Inf 12.00	98.2 % 1.8 %	1976	1976
4/1 (pontefract rd (w) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (potefracr road (e) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (lambra rd exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 2: '2020 SAT'** (FG2: '2020 SAT base plus dev', Plan 1: 'with peds')

**Traffic Flows, Desired**

**Desired Flow :**

Origin	Destination				Tot.
	A	B	C	Tot.	
A	0	466	143	609	
B	297	0	445	742	
C	24	358	0	382	
Tot.	321	824	588	1733	

Full Input Data And Results

**Traffic Lane Flows**

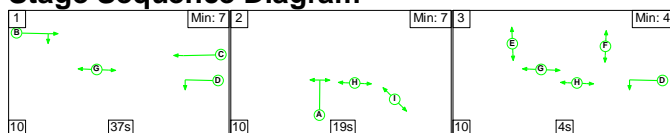
Lane	Scenario 2: 2020 SAT
<b>Junction: Unnamed Junction</b>	
1/1 (short)	297
1/2 (with short)	742(In) 445(Out)
2/1 (short)	143
2/2 (with short)	609(In) 466(Out)
3/1	382
4/1	588
5/1	824
6/1	321

**Lane Saturation Flows**

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (pontefract rd (e))	3.65	0.00	Y	Arm 6 Left	50.00	100.0 %	1922	1922
1/2 (pontefract rd (e))	3.65	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1980	1980
2/1 (lambra rd)	3.65	0.00	Y	Arm 4 Left	10.00	100.0 %	1722	1722
2/2 (lambra rd)	3.65	0.00	Y	Arm 5 Right	15.00	100.0 %	1800	1800
3/1 (potefracr rd (W))	3.65	0.00	Y	Arm 5 Ahead Arm 6 Right	Inf 12.00	93.7 % 6.3 %	1965	1965
4/1 (pontefract rd (w) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (potefracr road (e) exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (lambra rd exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 1: '2020 PM'** (FG1: '2020 PM base plus dev', Plan 1: 'with peds')

**Stage Sequence Diagram**



**Stage Timings**

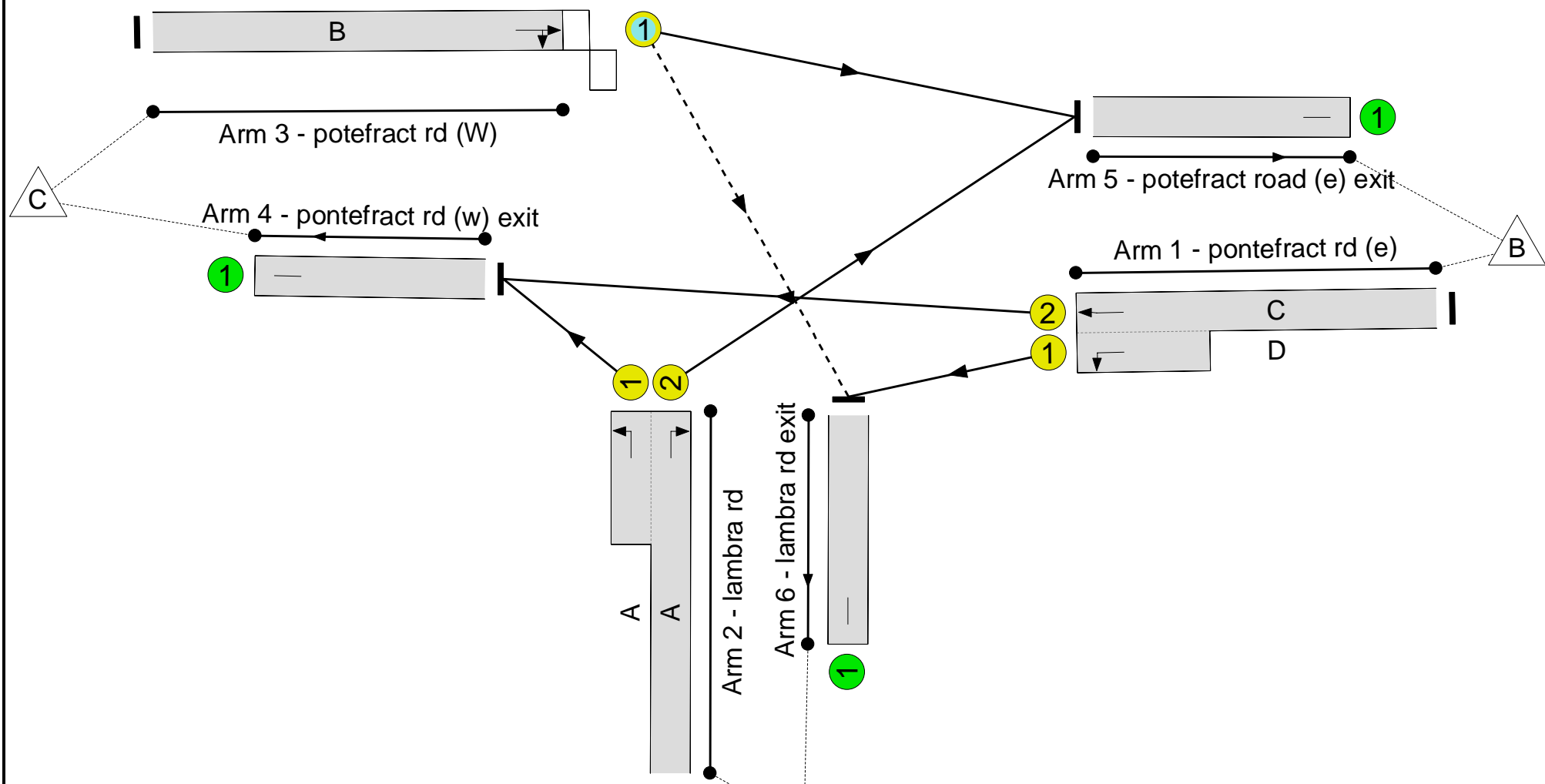

Stage	1	2	3
Duration	37	19	4
Change Point	0	47	76



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

Unnamed Junction  
PRC: 14.4 %  
Total Traffic Delay: 12.5 pcuHr



Full Input Data And Results

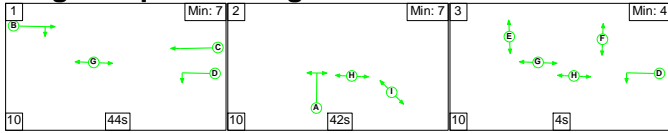
**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	N/A	-	-		-	-	-	-	-	-	78.7%
<b>Unnamed Junction</b>	-	-	N/A	-	-		-	-	-	-	-	-	78.7%
1/2+1/1	pontefract rd (e) Ahead Left	U	N/A	N/A	C D		1	37:51	-	620	1980:1922	636+285	67.3 : 67.3%
2/2+2/1	lambra rd Left Right	U	N/A	N/A	A		1	19	-	353	1800:1722	358+90	78.7 : 78.7%
3/1	potefract rd (W) Ahead Right	O	N/A	N/A	B		1	37	-	510	1976	833	61.2%
4/1	pontefract rd (w) exit	U	N/A	N/A	-		-	-	-	499	Inf	Inf	0.0%
5/1	potefract road (e) exit	U	N/A	N/A	-		-	-	-	783	Inf	Inf	0.0%
6/1	lambra rd exit	U	N/A	N/A	-		-	-	-	201	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	9	0	0	8.9	3.6	0.0	12.5	-	-	-	-
<b>Unnamed Junction</b>	-	-	9	0	0	8.9	3.6	0.0	12.5	-	-	-	-
1/2+1/1	620	620	-	-	-	3.0	1.0	-	4.0	23.1	9.7	1.0	10.7
2/2+2/1	353	353	-	-	-	3.1	1.8	-	4.9	50.0	6.9	1.8	8.7
3/1	510	510	9	0	0	2.9	0.8	0.0	3.7	25.9	9.9	0.8	10.7
4/1	499	499	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	783	783	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	201	201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	14.4	Total Delay for Signalled Lanes (pcuHr):	12.55	Cycle Time (s):	90					
			PRC Over All Lanes (%):	14.4	Total Delay Over All Lanes(pcuHr):	12.55							

Full Input Data And Results

Scenario 2: '2020 SAT' (FG2: '2020 SAT base plus dev', Plan 1: 'with peds')

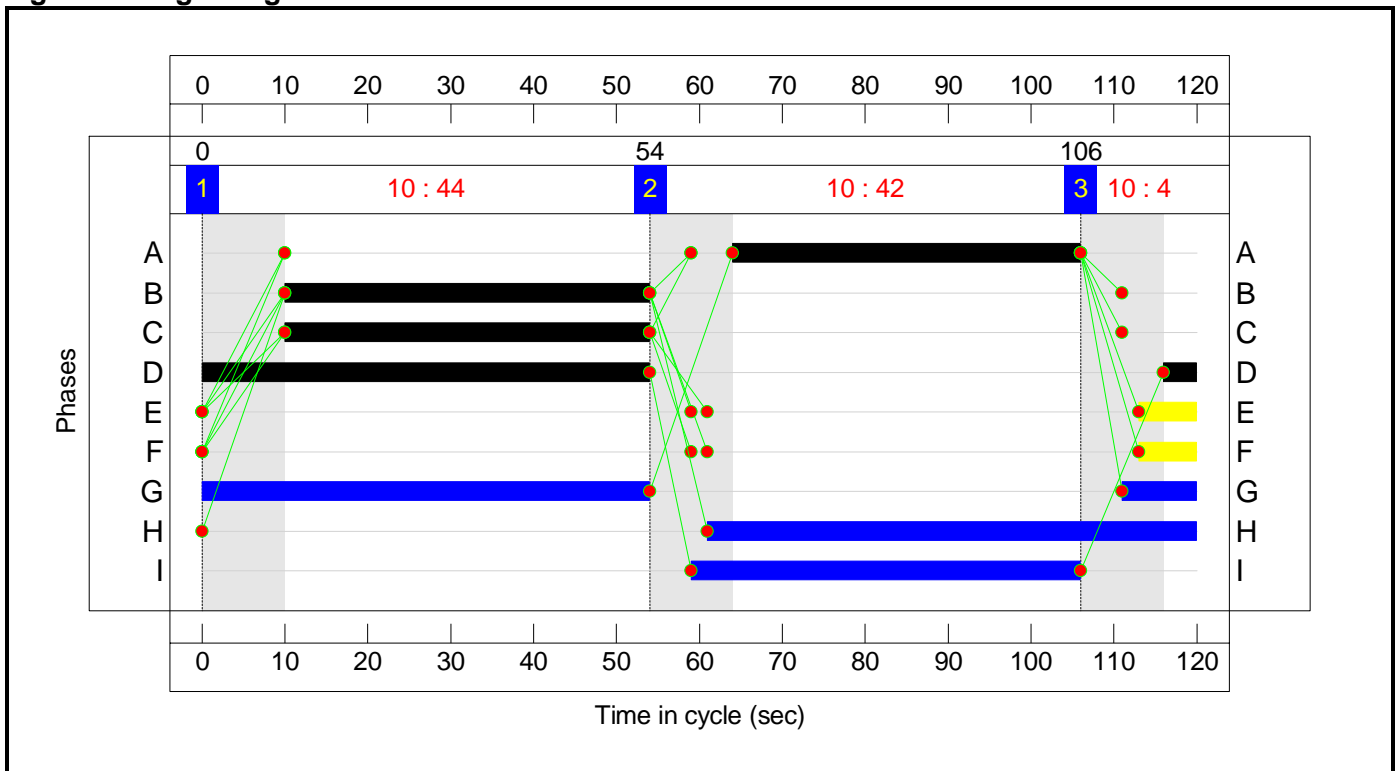
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	44	42	4
Change Point	0	54	106

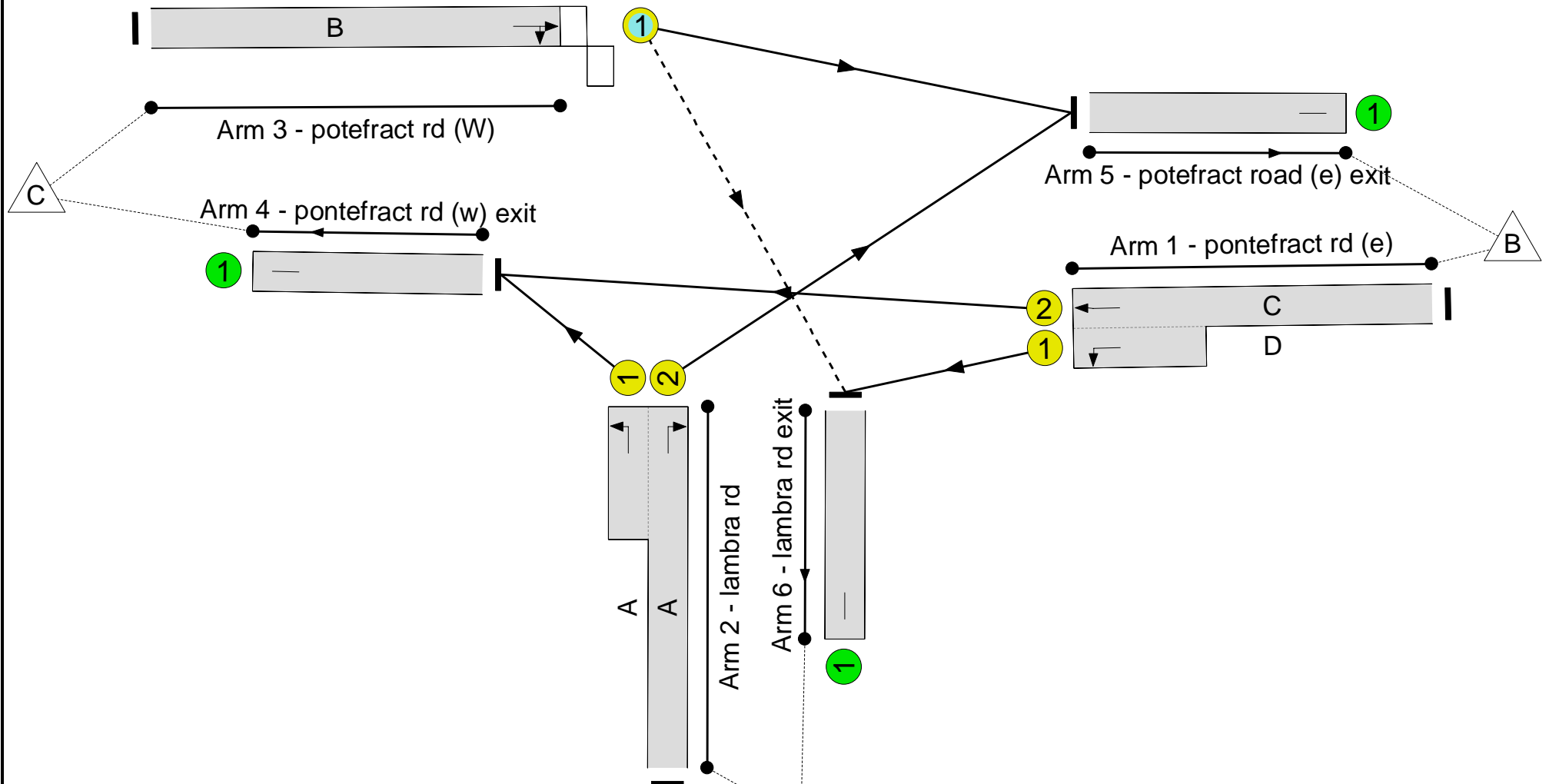

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

Unnamed Junction  
PRC: 1.4 %  
Total Traffic Delay: 23.6 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	N/A	-	-		-	-	-	-	-	-	88.8%
<b>Unnamed Junction</b>	-	-	N/A	-	-		-	-	-	-	-	-	88.8%
1/2+1/1	pontefract rd (e) Ahead Left	U	N/A	N/A	C D		1	44:58	-	742	1980:1922	502+335	88.6 : 88.6%
2/2+2/1	lambra rd Left Right	U	N/A	N/A	A		1	42	-	609	1800:1722	525+161	88.8 : 88.8%
3/1	potefract rd (W) Ahead Right	O	N/A	N/A	B		1	44	-	382	1965	589	64.8%
4/1	pontefract rd (w) exit	U	N/A	N/A	-		-	-	-	588	Inf	Inf	0.0%
5/1	potefract road (e) exit	U	N/A	N/A	-		-	-	-	824	Inf	Inf	0.0%
6/1	lambra rd exit	U	N/A	N/A	-		-	-	-	321	Inf	Inf	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	24	0	0	15.3	8.2	0.2	23.6	-	-	-	-
<b>Unnamed Junction</b>	-	-	24	0	0	15.3	8.2	0.2	23.6	-	-	-	-
1/2+1/1	742	742	-	-	-	6.3	3.6	-	9.9	48.3	19.3	3.6	23.0
2/2+2/1	609	609	-	-	-	5.9	3.6	-	9.5	56.2	17.4	3.6	21.0
3/1	382	382	24	0	0	3.1	0.9	0.2	4.2	39.2	9.9	0.9	10.8
4/1	588	588	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	824	824	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	321	321	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1			PRC for Signalled Lanes (%):	1.4	Total Delay for Signalled Lanes (pcuHr):	23.61	Cycle Time (s):	120					
			PRC Over All Lanes (%):	1.4	Total Delay Over All Lanes(pcuHr):	23.61							

Capabilities on project:  
Transportation

## **Appendix E6: SCHWABISCH GMUND WAY LINSIG Outputs**

Basic Results Summary  
**Basic Results Summary**

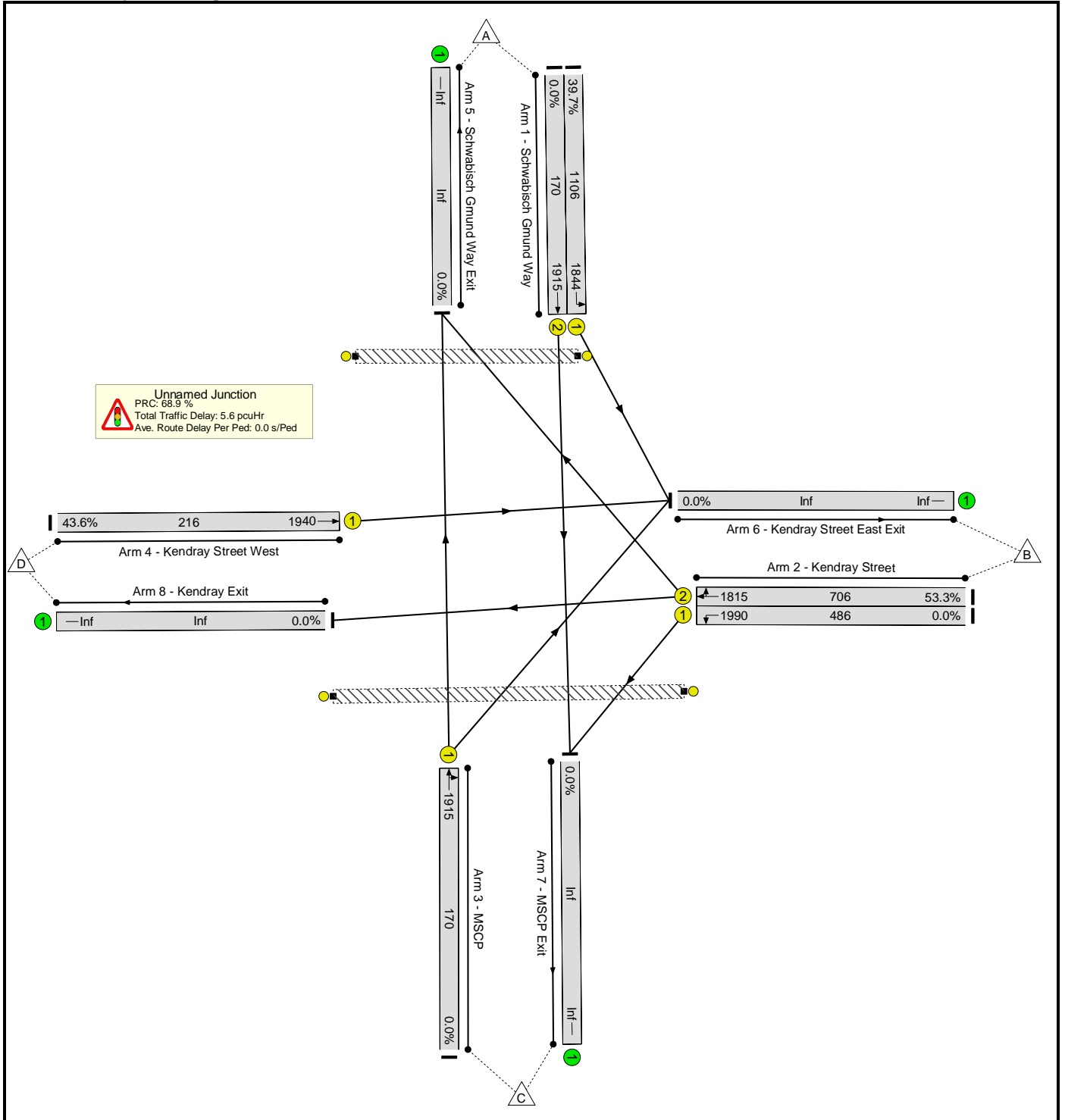
**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>File name:</b>	Schwabisch Gmund Way_Kendray St_PonteRd_MSCP_Jct.lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	
<b>Notes:</b>	

Basic Results Summary

Scenario 1: '2015 PM base' (FG1: '2015 Base PM Peak', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

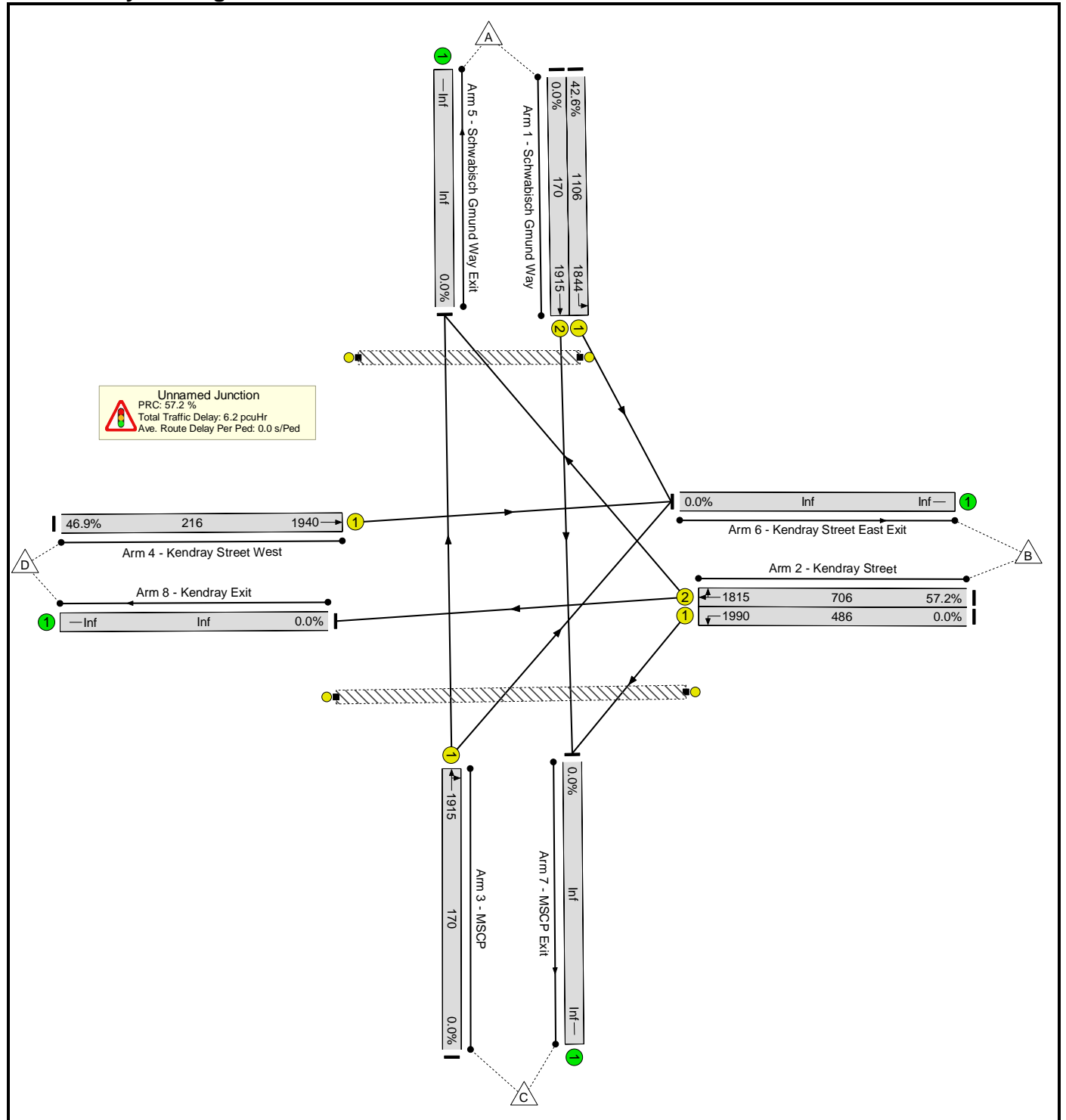
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	53.3%	0	0	0	5.6	-	-
Unnamed Junction	-	-	-		-	-	-	-	-	-	53.3%	0	0	0	5.6	-	-
1/1	Schwabisch Gmund Way Left	U	B		1	53	-	439	1844	1106	39.7%	-	-	-	1.5	12.1	6.1
1/2	Schwabisch Gmund Way Ahead	U	A		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0
2/1	Kendray Street Left	U	D		1	21	-	0	1990	486	0.0%	-	-	-	0.0	0.0	0.0
2/2	Kendray Street Right Ahead	U	C		1	34	-	376	1815	706	53.3%	-	-	-	2.8	26.6	7.8
3/1	MSCP Ahead Right	U	E		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0
4/1	Kendray Street West Ahead	U	F		1	9	-	94	1940	216	43.6%	-	-	-	1.4	52.1	2.6
Ped Link: P1	Unnamed Ped Link	-	I		1	38	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
C1					PRC for Signalled Lanes (%):		68.9	Total Delay for Signalled Lanes (pcuHr):				5.62	Cycle Time (s): 90				
					PRC Over All Lanes (%):		68.9	Total Delay Over All Lanes(pcuHr):				5.62					

Basic Results Summary

Scenario 2: '2020 PM base' (FG2: '2020 PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

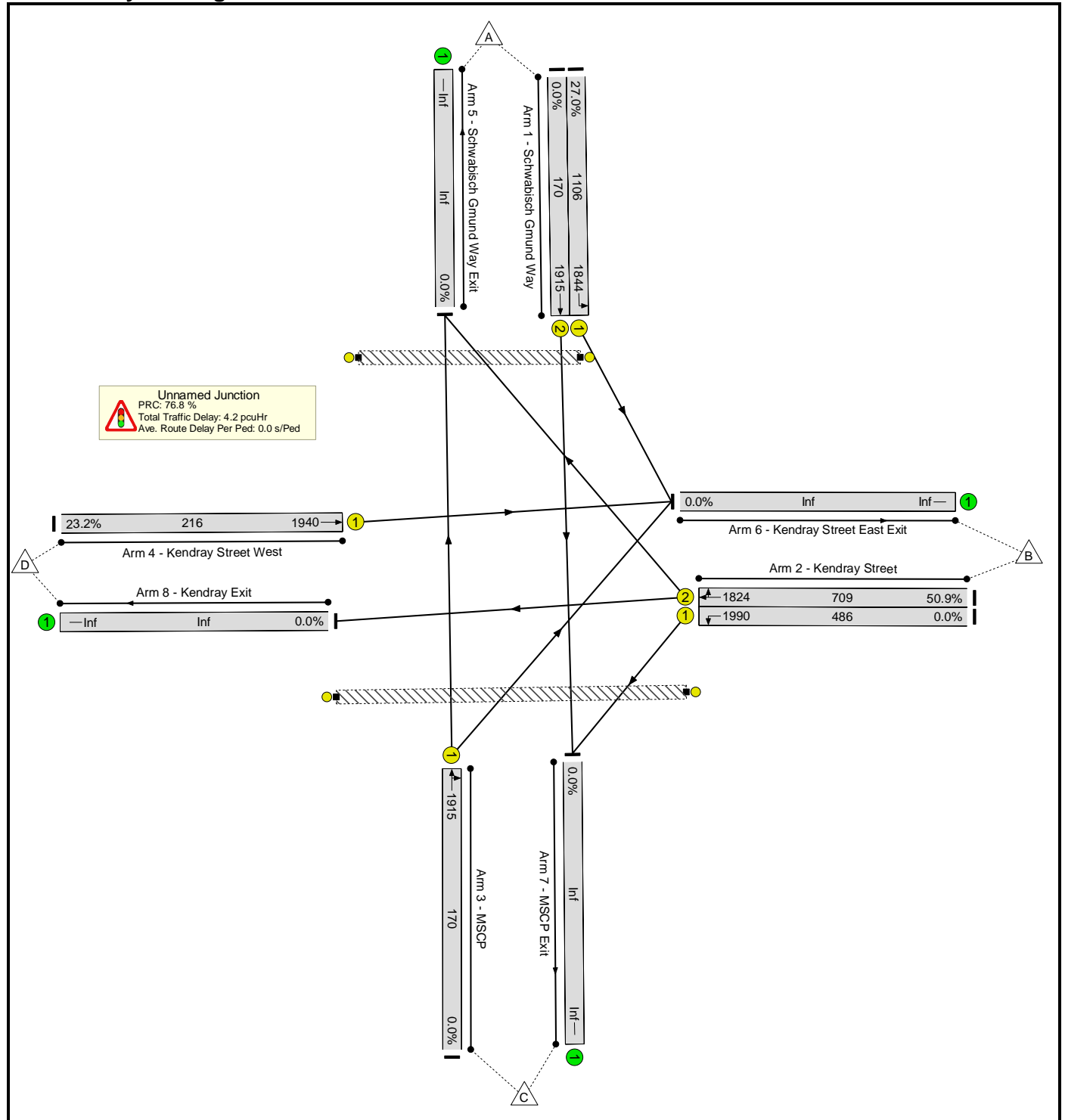
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	57.2%	0	0	0	6.2	-	-	
Unnamed Junction	-	-	-		-	-	-	-	-	-	57.2%	0	0	0	6.2	-	-	
1/1	Schwabisch Gmund Way Left	U	B		1	53	-	471	1844	1106	42.6%	-	-	-	1.6	12.5	6.7	
1/2	Schwabisch Gmund Way Ahead	U	A		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0	
2/1	Kendray Street Left	U	D		1	21	-	0	1990	486	0.0%	-	-	-	0.0	0.0	0.0	
2/2	Kendray Street Right Ahead	U	C		1	34	-	404	1815	706	57.2%	-	-	-	3.1	27.6	8.5	
3/1	MSCP Ahead Right	U	E		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0	
4/1	Kendray Street West Ahead	U	F		1	9	-	101	1940	216	46.9%	-	-	-	1.5	53.1	2.8	
Ped Link: P1	Unnamed Ped Link	-	I		1	38	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-	
C1					PRC for Signalled Lanes (%):		57.2	Total Delay for Signalled Lanes (pcuHr):				6.22	Cycle Time (s):		90			
					PRC Over All Lanes (%):		57.2	Total Delay Over All Lanes(pcuHr):				6.22						

Basic Results Summary

Scenario 3: '2015 Sat Base' (FG3: '2015 Saturday', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

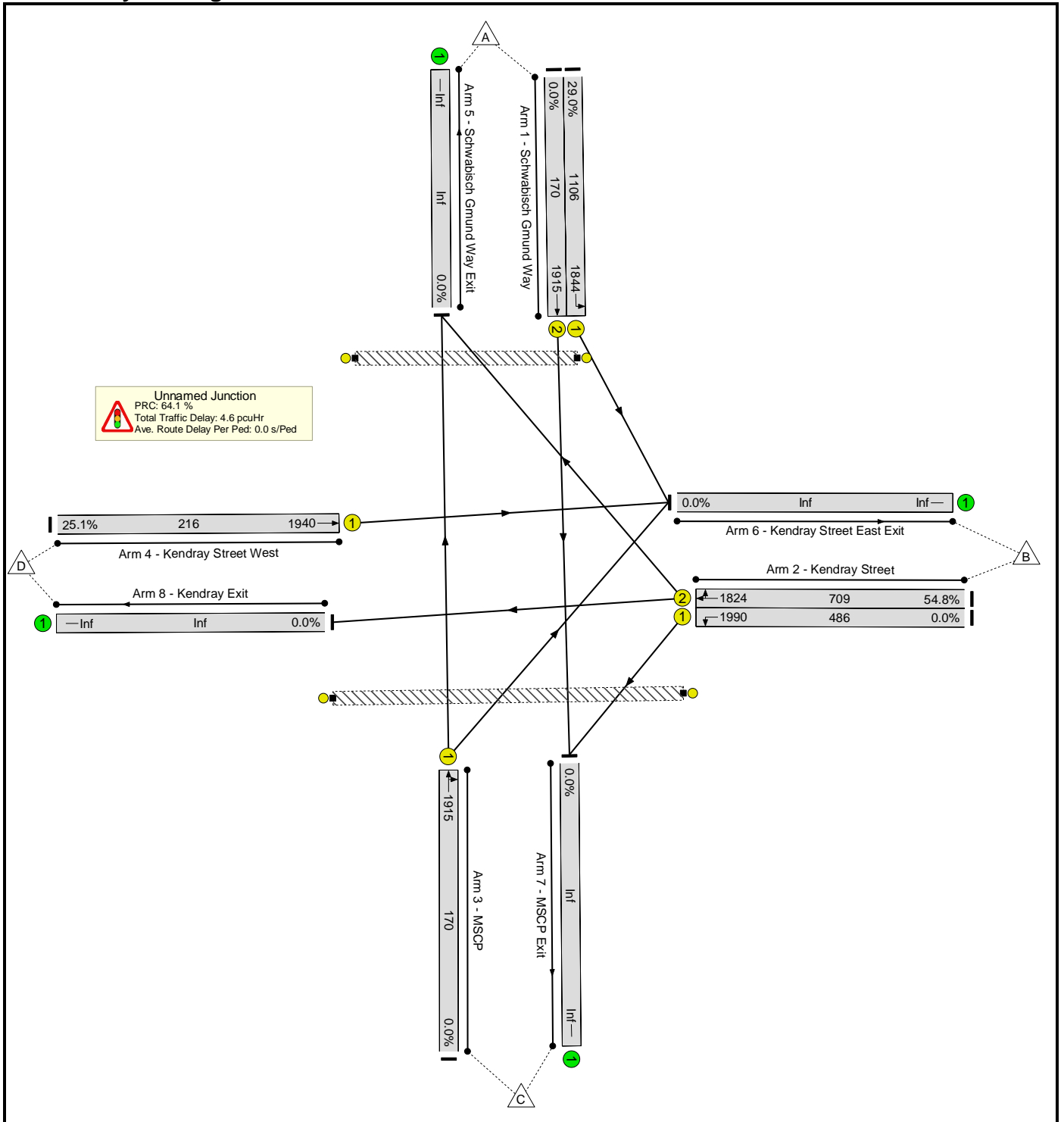
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	50.9%	0	0	0	4.2	-	-	
Unnamed Junction	-	-	-		-	-	-	-	-	-	50.9%	0	0	0	4.2	-	-	
1/1	Schwabisch Gmund Way Left	U	B		1	53	-	299	1844	1106	27.0%	-	-	-	0.9	10.8	3.7	
1/2	Schwabisch Gmund Way Ahead	U	A		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0	
2/1	Kendray Street Left	U	D		1	21	-	0	1990	486	0.0%	-	-	-	0.0	0.0	0.0	
2/2	Kendray Street Right Ahead	U	C		1	34	-	361	1824	709	50.9%	-	-	-	2.6	26.1	7.3	
3/1	MSCP Ahead Right	U	E		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0	
4/1	Kendray Street West Ahead	U	F		1	9	-	50	1940	216	23.2%	-	-	-	0.7	47.4	1.3	
Ped Link: P1	Unnamed Ped Link	-	I		1	38	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-	
C1					PRC for Signalled Lanes (%):		76.8	Total Delay for Signalled Lanes (pcuHr):				4.18	Cycle Time (s):		90			
					PRC Over All Lanes (%):		76.8	Total Delay Over All Lanes(pcuHr):				4.18						

Basic Results Summary

Scenario 4: '2020 Sat Base' (FG4: '2020 Saturday', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

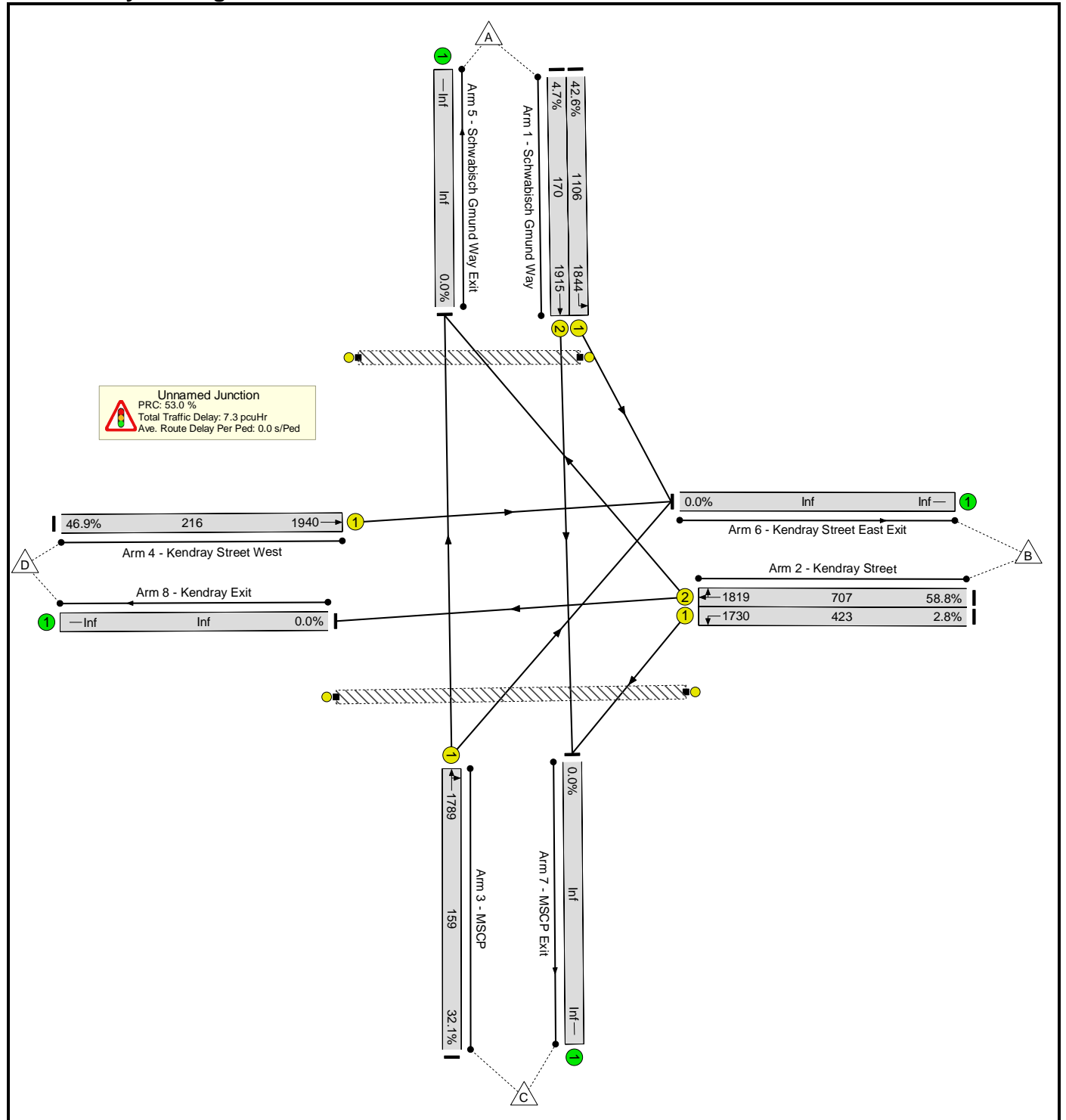
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	54.8%	0	0	0	4.6	-	-
Unnamed Junction	-	-	-		-	-	-	-	-	-	54.8%	0	0	0	4.6	-	-
1/1	Schwabisch Gmund Way Left	U	B		1	53	-	321	1844	1106	29.0%	-	-	-	1.0	11.0	4.0
1/2	Schwabisch Gmund Way Ahead	U	A		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0
2/1	Kendray Street Left	U	D		1	21	-	0	1990	486	0.0%	-	-	-	0.0	0.0	0.0
2/2	Kendray Street Right Ahead	U	C		1	34	-	389	1824	709	54.8%	-	-	-	2.9	27.0	8.1
3/1	MSCP Ahead Right	U	E		1	7	-	0	1915	170	0.0%	-	-	-	0.0	0.0	0.0
4/1	Kendray Street West Ahead	U	F		1	9	-	54	1940	216	25.1%	-	-	-	0.7	47.7	1.4
Ped Link: P1	Unnamed Ped Link	-	I		1	38	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
C1					PRC for Signalled Lanes (%):		64.1	Total Delay for Signalled Lanes (pcuHr):				4.61	Cycle Time (s): 90				
					PRC Over All Lanes (%):		64.1	Total Delay Over All Lanes(pcuHr):				4.61					

Basic Results Summary

Scenario 5: '2020 B + D' (FG5: '2020 PM Base + Dev', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

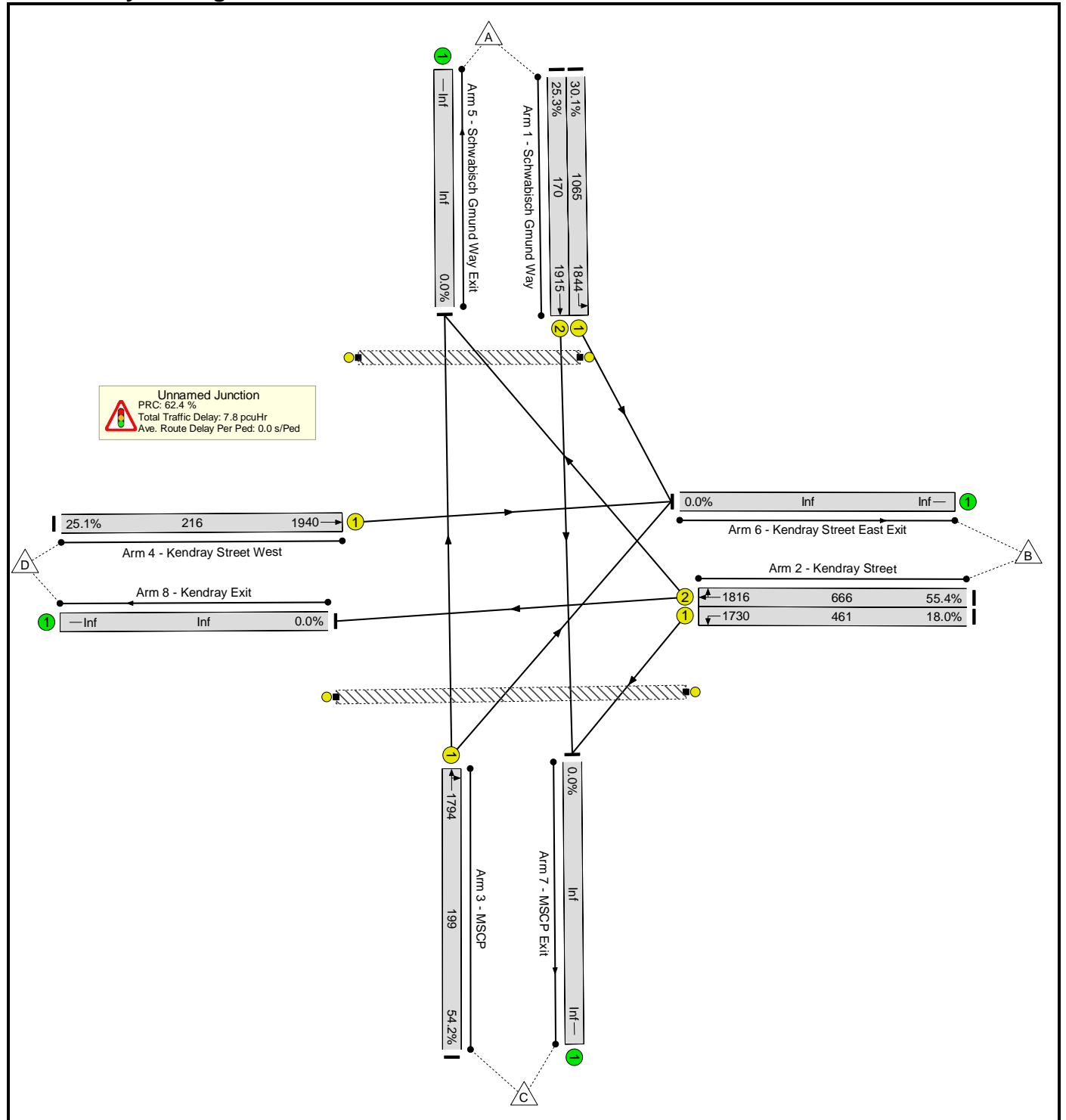
**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
Network	-	-	-		-	-	-	-	-	-	58.8%	0	0	0	7.3	-	-	
Unnamed Junction	-	-	-		-	-	-	-	-	-	58.8%	0	0	0	7.3	-	-	
1/1	Schwabisch Gmund Way Left	U	B		1	53	-	471	1844	1106	42.6%	-	-	-	1.6	12.5	6.7	
1/2	Schwabisch Gmund Way Ahead	U	A		1	7	-	8	1915	170	4.7%	-	-	-	0.1	48.9	0.2	
2/1	Kendray Street Left	U	D		1	21	-	12	1730	423	2.8%	-	-	-	0.1	30.4	0.2	
2/2	Kendray Street Right Ahead	U	C		1	34	-	416	1819	707	58.8%	-	-	-	3.2	27.9	8.9	
3/1	MSCP Ahead Right	U	E		1	7	-	51	1789	159	32.1%	-	-	-	0.8	55.1	1.4	
4/1	Kendray Street West Ahead	U	F		1	9	-	101	1940	216	46.9%	-	-	-	1.5	53.1	2.8	
Ped Link: P1	Unnamed Ped Link	-	I		1	38	-	0	-	0	0.0%	-	-	-	-	-	-	
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-	
C1					PRC for Signalled Lanes (%):		53.0	Total Delay for Signalled Lanes (pcuHr):				7.35	Cycle Time (s):		90			
					PRC Over All Lanes (%):		53.0	Total Delay Over All Lanes(pcuHr):				7.35						

Basic Results Summary

Scenario 6: '2020 Sat B + D' (FG6: '2020 Saturday Base + Dev', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

**Network Results**

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	-	-	-		-	-	-	-	-	-	55.4%	0	0	0	7.8	-	-
Unnamed Junction	-	-	-		-	-	-	-	-	-	55.4%	0	0	0	7.8	-	-
1/1	Schwabisch Gmund Way Left	U	B		1	51	-	321	1844	1065	30.1%	-	-	-	1.1	12.1	4.3
1/2	Schwabisch Gmund Way Ahead	U	A		1	7	-	43	1915	170	25.3%	-	-	-	0.6	52.3	1.2
2/1	Kendray Street Left	U	D		1	23	-	83	1730	461	18.0%	-	-	-	0.7	30.2	1.7
2/2	Kendray Street Right Ahead	U	C		1	32	-	369	1816	666	55.4%	-	-	-	2.9	28.7	7.9
3/1	MSCP Ahead Right	U	E		1	9	-	108	1794	199	54.2%	-	-	-	1.7	57.3	3.1
4/1	Kendray Street West Ahead	U	F		1	9	-	54	1940	216	25.1%	-	-	-	0.7	47.7	1.4
Ped Link: P1	Unnamed Ped Link	-	I		1	36	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	H		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
		C1		PRC for Signalled Lanes (%):		62.4		Total Delay for Signalled Lanes (pcuHr):		7.78		Cycle Time (s):		90			
				PRC Over All Lanes (%):		62.4		Total Delay Over All Lanes(pcuHr):		7.78							